MSc in

Finance and Banking

ATHENS UNIVERSITY OF ECONOMICS AND BUSINESS

# POSTGRADUATE STUDY GUIDE

# MASTER OF SCIENCE (M.Sc.)
# in FINANCE AND BANKING

## SCHOOL OF ECONOMIC SCIENCES

## DEPARTMENTS
## INTERNATIONAL AND EUROPEAN ECONOMIC STUDIES AND ECONOMICS

**Director: Professor, Nikolaos Topaloglou**

**ATHENS, NOVEMBER 2024**

# PART I: INFORMATION ABOUT THE INSTITUTION

## CONTACT DETAILS

ATHENS UNIVERSITY OF ECONOMICS AND BUSINESS (AUEB)
Address: 76 Patission Str., GR-10434, Athens
Telephone: +30-210-8203911
Website: https://www.aueb.gr e-mail: webmaster@aueb.gr
Facebook: https://www.facebook.com/auebgreece
Twitter: https://twitter.com/aueb
Linkedin: https://www.linkedin.com/school/athens-university-of-economics-and-business/mycompany/
Youtube: https://www.youtube.com/channel/UCPncunqp3bMuAHHeCikhalg
Instagram: https://www.instagram.com/aueb.gr/

## ACADEMIC AUTHORITIES

The rectorate authorities consist of the Rector and the Vice Rectors:

**Rector:**

Professor Vasilios Vasdekis

**Vice Rectors:**

**Vice Rector for Academic Affairs and Personnel**
Professor Leonidas Doukakis

**Vice Rector of Financial Planning and Infrastructure**
Assoc. Professor Eleanna Galanaki

**Vice Rector for Research and Lifelong Learning**
Professor Georgia Siougle

**Vice Rector for International Cooperation and Development**
Professor Nancy Pouloudi

**School of Economic Sciences**
Dean: Professor Theodoros Palivos
**Department of International & European Economic Studies**
Chair: Professor Spyridon Blavoukos
**Department of Economics**
Chair: Professor Evangelos Vasilatos

# INFORMATION ABOUT THE MSc's PROGRAM IN FINANCE & BANKING

Director: Professor Nikolaos Topaloglou
**Contact details**
Address: 47A Evelpidon Str. & 33 Lefkados Str., Athens, GR 113 62
Telephone number: +30 210 8203 689
Email: secretariat.financeandbanking@aueb.gr
Website: www.dept.aueb.gr/el/financeandbanking
Facebook: https://www.facebook.com/financeandbanking.aueb/
Linkedin: https://www.linkedin.com/school/aueb-msc-in-finance-banking

## ACADEMIC CALENDAR 2024-25

**ACADEMIC CALENDAR 2024-25 (FULL-TIME PROGRAM)**

**Fall Semester:** 23/09/2024 – 24/01/2024
**Christmas Recess:** 23/12/2024 - 06/01/2025
**Fall Semester Examination Period**: JANUARY 2025
**Spring Semester**: 27/01/2025 - 16/05/2025
**Eastes Recess**: 14/04/2025 - 25/04/2025
**Spring Semester Examination Period**: MAY- JUNE 2025

**ACADEMIC CALENDAR 2024-25 (PART-TIME PROGRAM)**

**Fall Semester:** 23/09/2024 – 19/12/2024
**Christmas Recess:** 23/12/2024 - 06/01/2025
**Fall Semester Examination Period:** DECEMBER 2024
**Spring Semester:** 7/01/2025-11/07/2025
**Easter Recess:** 14/04/2025 - 25/04/2025
**Spring Semester Examination Period**: MARCH, JULY 2025

**NATIONAL / BANK HOLIDAYS**

Monday, October 28,2024, National Day
Sunday, November 17, 2024, The Anniversary of Polytechnio
Thursday, January 30, 2025, Three Hierarchs
Monday, March 03, 2025, Annunciation of the Virgin Mary
Tuesday, March 25, 2025, Anniversary of March 25
Thursday, May 1, 2025, May Day
Monday, June 09, 2025, Pentecost Monday

## AUEB's OPERATIONAL STRUCTURE

The structure and operation of the Institution is defined by current legislation as in force. The Athens University of Economics and Business is under the supervision of the Ministry of Education and Religious Affairs. Its governing bodies include:

The Governing Council
The Senate
The Rector
The Vice-Rectors
The Executive Director

Until the Governing Council assumes its duties, administration is exercised by the University's Rector's Council

## AUEB's ACADEMIC STRUCTURE

The Athens University of Economics and Business is structured by academic units of two (2) levels: a) the Schools, and b) the Departments

Each School is structured by at least two (2) Departments, covers a domain of related scientific areas, and ensures the interdisciplinary approach to teaching and research between its departments. The School is responsible for supervising and coordinating the operation of the Departments and the educational and research work produced, in accordance with the Internal Operating Regulations.
The bodies of the School, according to Law 4957/2022 (A 141) as applicable are: a) the Dean and b) the Dean's Council

The Department is the University's fundamental academic unit and aims to advance a specific field of science, technology, letters and arts through education and research. The Department consists of all the members of the Teaching & Research Staff (DEP), the members of the Special Education Staff (EEP), the members of the Laboratory Teaching Staff (EDIP) and the members of the Special Technical Laboratory Staff (ETEP).
Bodies of the Department according to Law 4957/2022 (A 141) as applicable are: a) the Assembly, b) the Board of Directors, c) the Head/Chair and d) the Deputy Head/Chair.

The Athens University of Economics and Business consists of three Schools & eight Departments:

1. **SCHOOL OF ECONOMIC SCIENCES**

   Department of International and European Economic Studies

   Department of Economics

2. **SCHOOL OF BUSINESS**

Department of Management Science and Technology

Department of Business Administration

Department of Accounting and Finance

Department of Marketing and Communication**.**

3. **SCHOOL OF INFORMATION SCIENCE AND TECHNOLOGY**

Department of Informatics

Department of Statistics

## ADMINISTRATIVE BODIES OF POSTGRADUATE STUDY PROGRAMS

Competent bodies for the organization and operation of the Postgraduate Study Programs are:
a) the Senate,
b) the Assembly of the Department,
c) the Coordinating Committee (CC), and
d) the Director of the Postgraduate Program.

Especially for inter-departmental, inter-institutional and joint programs, the responsibilities of the Department's Assembly are exercised by the Curriculum Committee

**UNIVERSITY STAFF**

The University staff consists of the following categories:

**- TEACHING STAFF:**

- Teaching & Research Staff (DEP)
- Emeritus Professors
- Visiting Professors
- Special Education Staff (E.E.P.)
- Laboratory Teaching Staff (E.DI.P.)
- Special Technical Laboratory Staff (E.T.E.P.)
- Auxiliary Teaching Staff
- Teaching Fellows
- Scientific Faculty Members
- Adjunct Instructors
- Secondet Teachers

- **ADMINISTRATIVE STAFF**

## SERVICES

The Athens University of Economics and Business provides both administrative and other services (meals, housing, library, sport facilities etc.) aiming at serving both its students and staff. More information on the organization and operation of the University's services can be found on the University´s website (http://www.aueb.gr/en).

## GENERAL DESCRIPTION OF THE UNIVERISTY

The Athens University of Economics and Business (AUEB), as a Higher Educational Institution, is a legal entity governed by public law and supervised by the Ministry of Education, Research and Religious Affairs.
AUEB is, in order of seniority, the third Higher Education Institution of the country and the first in the fields of Economics and Business Administration. Later, the scientific fields of Informatics and Statistics were added. Since its founding, in 1920, AUEB has a rich and noteworthy tradition of significant academic achievements that define the present and create excellent prospects for the future.
The University as a center of excellence, in academic research and teaching, is rated as one of the leading universities in its subject areas in Greece and one of the best internationally. The high level of its staff, the quality in teaching and research, the modern curriculum/courses, but also the high demand of its graduates significantly enhance the University's brand name and reputation, in Greece and abroad.
Detailed information on the study programs is provided in the study guides and departmental websites.

## ADMISSION/REGISTRATION PROCEDURE

**Chief Regulations of the University (including academic recognition procedures)**
The regulations include, for example:

- The University's Internal Operating Regulations
- The Organization of Administrative Services
- The Regulations for the Operation of Postgraduate and Doctoral Study Programs
- The Internal Regulation for conducting postdoctoral research

## AUEB's ECTS Coordinator

The University's ECTS Coordinator is the Quality Assurance Chairperson, who ensures the University's compliance with the principles and rules of the European credit accumulation and transfer systems, supervises compliance and implementation and is responsible for the full recognition and transfer of credit units.

# PART II: INFORMATION ABOUT THE INTERDEPARTMENTAL MASTER'S PROGRAMME IN FINANCE AND BANKING

## GENERAL DESCRIPTION

The Interdepartmental Master's Programme entitled "**MSc in Finance and Banking**" of the Departments of International and European Economic Studies and Economics of the University of Athens, was re-established with the no. 5053/10.07.2018 decision of the Senate of the Athens University of Economics.

In accordance with Greek law, the Programme is governed by:

1. The University's Senate
2. The Coordinating Committee of the programme
3. The Steering Committee of the programme
4. The Director of the Programme.

## THE FIELD OF STUDIES OF THE PROGRAMME

The Interdepartmental **MSc Programme in Finance and Banking** aims at deepening the scientific knowledge and technical training of its students in the fields of **Finance and Banking**. The Programme specializes in these two areas of economics and focuses on them as follows:

a) In the **field of Finance**, the objective of the Programme is the specialization and training of students in the areas of valuation of securities, financial risks, optimal portfolio management, big data management in finance, forecasting, dividend policy and optimal financial structure of businesses, asymmetric information, regulation and efficiency of financial markets.

b) In the **field of Banking**, the Programme aims at the analysis and quantification of the risks of credit institutions, their credit policy and portfolio management, their regulatory framework at the European and international levels, the monetary policy and operation of central banks, as well as macroprudential policy for risks associated with extreme events.

c) In both of the above fields, the Programme provides all of the knowledge and techniques necessary to fully train the students.

## THE ACADEMIC DEGREE AWARDED

The Interdepartmental Master's Programme awards the degree of **MSc in Finance and Banking.**

## ENTRANCE REQUIREMENTS

To the MSc in Finance and Banking are accepted holders of a degree from the first cycle of academic education of the country and of Universities' Departments, with a relevant academic subject (including Departments of Finance, International & European Economic Studies, Economic and Regional Development, as well as Departments of Schools of Sciences (Engineering, Mathematics, Physics, Statistics, Informatics, etc.). Candidates with a first degree in a different academic subject from the above, who possess a basic level of knowledge of mathematics and statistics, may also be admitted to the postgraduate program.

The Interdepartmental Master's Programme "Finance and Banking" will accept up to 60 admissions into the full-time programme and up to 60 admissions into the full-time programme each academic year.

The selection of students is carried out in accordance with the relevant Greek laws and the Operating Regulations of the Programme.

The documents required to apply to the Programme, which are included every year in the announcement stating that applications are being accepted, are the following:

- The application (electronically) with a recent photograph.
- A copy of the undergraduate degree and a transcript of classes. Students of Higher Education Students in their final year of undergraduate studies must submit a statement (in accordance with Greek law 1599/86) that their acceptance into the Programme is contingent upon them having obtained their degree by the end of the upcoming September exam period.
- Certification of excellent or very good knowledge of the English language (at the C2 or C1 level). Students who do not have such certification when they submit their application must submit a statement (in accordance with Greek law 1599/86) that their acceptance into the Programme is contingent upon them acquiring the required certification of knowledge of English.
- Two letters of recommendation from professors (for candidates for full-time studies) and/or employers (for candidates for part-time studies).
- Verification of work experience (for candidates for part-time studies).

In the case of an application submitted by a candidate holding a degree from a foreign institution, the Postgraduate Programme's secretariat, to accept the application as eligible for examination, checks through DOATAP whether the institution is recognized, following the prescribed procedure in accordance with the written/texts provisions.

The selection of candidates is based on the grade of their basic degree as well as their performance in the individual interview. In the individual interview, various qualitative characteristics of the candidates are considered, among them, their existing scientific and cognitive background, as well as the content of the

letters of recommendation that have been granted to them by academic staff. In the evaluation of the candidates, it is positively counted if they have a recognized master's degree in a subject related to the master's program, or possibly professional experience.

## Expected Learning Outcomes / Objectives of the Programme

The objectives of the Programme are:

1) the scientific education, specialization and professional training of postgraduate students, executives of companies and organizations to meet the needs of the private and public sectors,
2) the provision of specialized knowledge to, and the development of technical skills in, scientists active in businesses, and financial and banking institutions.

The Programme provides a concentration in the areas of **Finance and Banking** which are not specializations, and which are not listed on the transcript or the Diploma Supplement which the graduates receive.

## Access to further studies/Career opportunities for graduates

Graduates of the Programme can continue their studies at the Doctoral Level or find employment in financial and banking institutions and other companies in the field to meet the needs of the private and public sectors.

## The courses, with ECTS credits, for the full-time programme

The duration of studies for the full-time programme is **three semesters** which includes the time for preparing the Master's dissertation and submitting it for approval. In order to obtain the Master's degree, students are required to attend and pass examinations in four compulsory courses that have 7.5 ECTS credits each, three compulsory courses corresponding to 6 ECTS credits each, two elective courses that have 6 ECTS credits each, and prepare a Master's dissertation equivalent to 30 ECTS credits.

The duration of studies for the part-time programme is **four semesters** which includes the time for preparing the Master's dissertation and submitting it for approval. In order to obtain the Master's degree, students are required to attend and pass examinations in four compulsory courses that have 7.5 ECTS credits each, three compulsory courses equal to 6 ECTS credits each, two elective courses corresponding to 6 ECTS credits each, and either (a) prepare a Master's dissertation equivalent to 30 ECTS credits, or (b) attend and pass examinations in three courses with 10 ECTS credits each, in place of the dissertation.

The total number of credits needed to graduate is **90 ECTS credits**. The courses are taught in Greek and/or English.

The distribution of courses for the full-time programme, by semester, is shown in the table below.

| PREPARATORY COURSES | | | |
|---|---|---|---|
| **COURSE CODE** | **COURSE TITLE** | **COURSE TYPE** | **ECTS** |
| **m44202s** | **MATHEMATICS** | **PREPARATORY** | **0** |
| **m44201p** | **STATISTICS** | **PREPARATORY** | **0** |
| **1ST SEMESTER** | | | |
| **COURSE CODE** | **COURSE TITLE** | **COURSE TYPE** | **ECTS** |
| **m44103f** | **THE ECONOMICS OF FINANCIAL MARKETS** | **COMPULSORY** | **7,5** |
| **m44104f** | **FINANCIAL REPORTING AND ANALYSIS** | **COMPULSORY** | **7,5** |
| **m44105f** | **QUANTITATIVE METHODS** | **COMPULSORY** | **7,5** |
| **m44106f** | **CAPITAL MARKETS AND PORTFOLIO MANAGEMENT** | **COMPULSORY** | **7,5** |
| **TOTAL SEMESTER'S CREDITS** | | | **30** |
| **2ND SEMESTER** | | | |
| **COURSE CODE** | **COURSE TITLE** | **COURSE TYPE** | **ECTS** |
| **m44107f** | **FINANCIAL DERIVATIVES** | **COMPULSORY** | **6** |
| **m44108f** | **BANKING AND RISK MANAGEMENT** | **COMPULSORY** | **6** |
| **m44110f** | **CORPORATE FINANCE** | **COMPULSORY** | **6** |
| | **ELECTIVE COURSE*** | **ELECTIVE** | **6** |
| | **ELECTIVE COURSE*** | **ELECTIVE** | **6** |
| **TOTAL SEMESTER'S CREDITS** | | | **30** |
| **3RD SEMESTER** | | | |
| **m44111f** | **DISSERTATION** | **COMPULSORY** | **30** |
| **TOTAL SEMESTER'S CREDITS** | | | **30** |

Below is an indicative list of elective courses offered:

- Companies' and Banks' Valuations and Mergers
- Credit Risk Management
- Financial Risk Management
- Special Issues in Finance and Investments (International Finance)

• Special Topics in Banking

• Market Microstructure with Statistical and Computational Methods
• Sustainable Finance
• Large Data and Statistical Learning
• Information Technologies, Trading & Investment Strategies

The distribution of courses by semester for the part-time programme is determined by the Programme's governing bodies and is included in the Programme's Studies Regulations.

Students in the **part-time programme** are given the option of attending and taking exams in three courses equal to 10 ECTS credits each, instead of writing a dissertation. The three courses are:

1. Special Issues in Finance and Investments (International Finance)
2. Special Topics in Banking
3. Information Technologies, Trading and Investment Strategies

The course program may include a series of educational activities aimed at deepening and consolidating at a high level the students' knowledge in scientific areas of the subject of the study program. The educational activities may include, seminar lectures-speeches by specialized persons, companies-organizations and/or distinguished academics with relevant experience in the field of Master's Programme, experiential activities, educational trips, tutoring training/exercises in the context of curriculum courses, workshops, analysis of business case studies, educational simulation programs, educational events, preparation and acquisition of professional certifications, trainings, days of distinguished academics and invited speakers, development and conduct of business games.

It is possible for students to choose courses from other Master's Programmes in the School or in the University following a decision by the Programme's Coordinating Committee. The courses offered each year are decided upon by the Programme's Coordinating Committee.

Modification of the curriculum and redistribution of courses between semesters can be made following decisions of the governing bodies, in accordance with the Postgraduate Studies Regulations.

The part-time programme is aimed at candidates who are working. An application for the part-time programme may be accepted from a candidate who is not working, but who is unable to meet the full-time study obligations for a variety of reasons, such as health or family.

The TUITION FEES for attending the Interdepartmental Master's Programme are set at 5,400 euros for the full-time programme and 7,000 euros for the part-time programme and are paid in 5-7 instalments over the course of studies in the programme, on dates that are determined by the Interdepartmental Committee of the Programme.

**Full Time Program Instalments**

| | |
|---|---|
| 1st instalment paid with the acceptance of the position | 1.000 € |
| 2nd instalment paid until 31/10 of the 1st semester | 1.000 € |
| 3rd instalment paid until 31/1 of the 1st semester | 1.000 € |
| 4th instalment paid until 31/3 of the 2nd semester | 1.000 € |
| 5th instalment paid until 30/9 of the 3rd semester | 1.400 € |
| **Total tuition fees** | **5.400 €** |

**Part Time Program Instalments**

| | |
|---|---|
| 1st instalment paid with the acceptance of the position | 1.000 € |
| 2nd instalment paid until 31/10 of the 1st semester | 1.000 € |
| 3rd instalment paid until 31/1 of the 1st semester | 1.000 € |
| 4th instalment paid until 31/3 of the 2nd semester | 1.000 € |
| 5th instalment paid until 30/9 of the 3rd semester | 1.300 € |
| 6th instalment paid until 31/1 of the 3rd semester | 1.200 € |
| 7th instalment paid until 31/5 of the 4th semester | 500 € |
| **Total tuition fees** | **7.000 €** |

The Master's Programme can award scholarships or excellence awards to postgraduate students, based on academic criteria, by decision of the Departmental General Assembly.

Students who meet certain criteria determined by Greek law article 86, Law 4957/2022, are entitled to exemption from tuition fees upon decision of the Department's General Assembly.

The **Internship** is not a prerequisite for the completion of studies and is not mandatory. Students of the program can do an internship at an institution/company of their choice as long as their studies are not hindered.

## Regulations regarding Exams and Assessment/Grading

Class attendance is mandatory. A student whose absences exceed 1/3 of the teaching hours in a given course is considered to have failed the course and must repeat it the very next time that it is taught. The Master's Coordinating Committee which examines the case and the reasons for exceeding the prescribed absences, may decide on the continuation or not of the studies of the student who exceeded the limit of absences. Attendance of preparatory courses is not compulsory.

The evaluation of students in the courses is done by written or oral examination, assignment, exculpatory assignment, or a combination of the above, in-person or with digital evaluation methods.

When conducting written or oral examinations, as evaluation methods, the integrity of the process must be guaranteed. If the evaluation is carried out with final exams, the exams are carried out after the completion of the teaching work of each course or the completion of each educational activity. Please note that there is no exam in the preparatory courses.

Determining the method and process of evaluating students in a course is the sole responsibility of the teacher who has been assigned to teach the course by the Master's Coordinating Committee. The formation of the final grade of each course is determined by the teachers. Students' individual and group work can contribute to it.

Attending the exams on the specific date announced as per the Exams' Program is compulsory. If a student does not attend the specific examination date of a course, he/she loses the examination period and is considered to have failed the course. If a student cannot attend the exam due to illness, he/she should inform the Secretariat as soon as possible. If he/she presents a medical certificate within two (2) days from the date of the examination, he may be examined later within the current examination period, provided that the teacher of the course agrees.

The grading scale ranges from zero (0) to ten (10), in increments of half or whole units. A grade of 5 and above is a passing grade. In the case of re-take examination, the grading scale ranges from (0) to five (5). A student who fails to appear for the exam in a given course on the specified date, without excuse, loses that examination period and is considered to have failed the given course.

Re-examination is not allowed in a course that has already been graded successfully, for the student to improve his/her grade. Correction of a grade after it has been announced by the Secretariat is allowed, if a justified detour or calculative error has occurred following a written request of the teacher and a decision of the Master's Coordinating Committee.

Failure in more than two courses (cumulative) in the exams of all the semesters results in the student being dropped from the Programme. However, at the discretion of the Coordinating Committee, the student who failed, may be allowed either to attend and be examined in the following academic year in these courses and, in case of success, the grade he/she will receive in them will be seven (7), or to repeat the entire program from the beginning (all courses) in the following academic year paying half the tuition fees.

## DISSERTATION

The Master's dissertation is mandatory for students in the **full-time programme** and is prepared during their 3$^{rd}$ semester, while for students in the **part-time programme**, it is not mandatory and, if they choose to do it, is prepared in their 4$^{th}$ semester. Issues related to the writing of the dissertation (such as completion date, language, font, instructions for the summary, content, structure and presentation of the work, preparation of the bibliography, and so forth) are explained in the Guidelines for Preparation of the Master's Dissertation.

The evaluation of the Master's dissertation is based on strict scientific criteria with regard to its originality, depth and analysis, composition and quality. If the student does not receive a passing grade on the dissertation, the student can be re-examined one additional time, not earlier than three months nor later than six months after the original examination. If the student does not receive a passing grade on the dissertation from the second examination, the student is required to leave the Programme, upon decision of the Programme's Coordinating Committee.

## AWARD AND GRADUATION DIPLOMA

To be awarded the Master's degree, a student must have received a passing grade in all the postgraduate courses and the dissertation. If this condition is not met within the stipulated deadline, the student is entitled only to a certificate verifying successful completion of the courses that were passed and the student's enrolment in the Programme ends.

Postgraduate students complete their studies and are awarded the Master's Degree when they have fulfilled all the requirements of the Programme, which are successful examination in the courses of the Programme, approval of the dissertation and payment of tuition fees.

The final grade for the Master's degree (MSc) is the average of the grades for the postgraduate courses and the grade for the dissertation.
The grade awarded to the Master's degree (MSc) certifies the successful completion of the postgraduate student's studies. The MSc degree which the student is awarded carries the designation of Good, Very Good, or Excellent which correspond to:

⇒ "Excellent" from 8.51 to 10,

⇒ "Very Good" from 6.51 to 8.50, and

⇒ "Good" from 5 to 6.50.

## GRADUATE STUDENT PROFESSOR ADVISOR

For each postgraduate student, is assigned from the Programme's Coordinating Committee a faculty member as a Professor Advisor, with the aim of supporting him/her during his/her studies in accordance with the decision of the University's Senate (6th meeting/12-01-2023) and the Institution's Postgraduate and Doctoral Studies Program Regulations (article 12, B 3140/2023).

## EDUCATIONAL LABORATORY OF SCHOOL OF ECONOMICS (ECONLAB)

Students in the Interdepartmental Master's Programme in Finance and Banking have access to the **Educational Laboratory of School of Economics (EconLAb),** a fully-organized lab which is equipped with specialized software and databases which help not only in teaching the subject areas of finance and banking but also in the statistical processing and analysis of data with a complete series of statistical, mathematical and econometric packages and applications.

A series of lectures and educational seminars are conducted in the lab of the postgraduate programme, as well as in the applied labs in the main building of the University.

In addition, the students in the Programme are provided with:

- **Educational Seminars:**
  - Bloomberg seminar
  - Introduction to SQL and Databases for Financial Applications
  - PYTHON seminar

- Direct access to and practice with a series of databases, such as:
  **Bloomberg**
  **Eikon / DataStream**

- Direct access to econometric packages for data analysis, such as:
  **EViews, Stata, R, MATLAB, SQL, SPSS, GAMS**

- Access via the AUEB network to electronic journals and electronic databases.

The applied lab of the postgraduate programme is housed in AUEB's Postgraduate Studies and Research Building, located at 47A Evelpidon & 33 Lefkados Streets, 6th floor, Room 610.

## CERTIFICATION BY THE CFA INSTITUTE UNIVERSITY RECOGNITION PROGRAM

The Interdepartmental Master's Programme in Finance and Banking has been accepted into the **CFA Affiliated Program**. Through this recognition, the international organization **CFA® (Chartered Financial Analysts)** certifies that the Master's programme offers a curriculum which is consistent with the requirements of the Institute for the acquisition of the internationally-established professional title which is awarded by the **CFA® Institute.** As such, the Interdepartmental Master's Programme is eligible to award up to three (3) scholarships per academic year within the framework of the CFA Program Awareness Scholarships, to students who wish to take the exam to earn professional certification from the CFA. Scholarships take the form of partial exemption from the examination fees for certification.

The professional title awarded by the **CFA® Institute** has been recognized by the Hellenic Capital Market Committee and the Athens Stock Exchange and entitles the titleholders to exemption from the corresponding exams that are held in Greece. In the private sector, possession of this title from the **CFA® Institute** carries special weight and is an important qualification for all those who work or wish to work in investment, banking and, more generally, in the wider financial sector. Students in the Interdepartmental Master's Programme in Finance and Banking, in addition to the thorough academic training received in the subjects that are analysed in the curriculum, are prepared as well to attain a highly prestigious professional certification, thus acquiring a significant advantage in the labour market.

# DESCRIPTION OF INDIVIDUAL COURSES

# FULL TIME PROGRAM

## PREPARATORY COURSES

| | |
|---|---|
| **Course title** | **MATHEMATICS** |
| **Course code** | m44202s |
| **Type of course** | Preparatory |
| **Level of course** | Postgraduate |
| **Year of study** | 1st |
| **Semester/trimester** | 1st |
| **Number of credits allocated** | 0 |
| **Name of lecturer** | Gatsios Konstantine, Professor, Dept of Economics |
| **Objective of the course (preferably expressed in terms of learning outcomes and competences)** | The aim of the course is to provide students with the necessary mathematical tools employed in the teaching of main courses of the Programme and used in the related literature, as well as to familiarize them with the application of mathematics in addressing economic problems. |
| **Prerequisites** | None. |
| **Course contents** | The topics covered by the course are: functions and equations; the time value of money (the present and the future value of money); matrices (matrix operations, transposes and inverses, determinants, Cramer's Rule); differential calculus (derivatives, rules of differentiation; Taylor Series expansion, maxima and minima of functions of one and of more than one variables, optimization with and without constraints); integral calculus (rules of integration, definite and indefinite integrals, improper integrals). |
| **Recommended reading** | Basic:<br>Chiang A.: Fundamental Methods of Mathematical Economies, 3rd Edition, McGraw-Hill<br>Watsham, J. T. and Parramore, K.: Quantitative Methods in Finance<br>Additional:<br>Silberberg E.: The Structure of Economies: A Mathematical Analysis, Mc Graw Hill<br>Hands D. W.: Introductory Mathematical Economics |
| **Teaching methods** | Lectures, assignments. |
| **Assessment methods** | Exercise solving (there is no final examination or marking) |
| **Language of instruction** | Greek |

| | |
|---|---|
| | |

| | |
|---|---|
| **Course title** | **STATISTICS** |
| Course code | m44201s |
| **Type of course** | Preparatory |
| **Level of course** | Postgraduate |
| **Year of study** | 1st |
| **Semester/trimester** | 1st |
| **Number of credits allocated** | 0 |
| **Name of lecturer** | Demos Antonios, Professor, Dept of International and European Economic Studies |
| **Objective of the course (preferably expressed in terms of learning outcomes and competences)** | The main objective of the course is to remind student the basic notions in statistics so that they would be able to follow a course in Quantitative Analysis or Finance. |
| **Prerequisites** | None. |
| **Course contents** | Random Variables and their Probability Distributions: Discrete and Continuous Random Variables. Joint Distributions, Conditional Distributions, and Independence. Features of Probability Distributions: Expected Value, Median, Variance, Standardizing a Random Variable. Features of Joint and Conditional Distributions, Covariance, Correlation, Variance of Sum of Random Variables, Conditional Expectation. The Normal and Related Distributions. Population, Parameters, and Random Sampling. Finite Sample Properties of Estimators. Interval Estimation and Confidence Intervals: Confidence Intervals for the Mean from a Normally Distributed Population. |
| **Recommended reading** | Tsionas, Statistics with Economic Applications, AUEB (in Greek).<br>Chalikias, Statistics, Rosili (in Greek).<br>Chatzinikolaou, Statistics for Economists, (in Greek).<br>Studenmund: Using Econometrics, Addison, Wesley, Longman<br>Wooldridge: Introductory Econometrics, Thomson.<br>*Heij, et al.: Econometric Methods with Applications*<br>Notes: www.aueb.gr/users/demos/mbasta.pdf |
| **Teaching methods** | Lectures coupled with exercise solving and introduction to statistical analysis with R or e-views. |
| **Assessment methods** | Exercise solving (there is no final examination or marking) |
| Language of instruction | Greek/English |

## COMPULSORY COURSES

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| **Course title** | **ECONOMICS OF FINANCIAL MARKETS** |
| **Course code** | m44103f |
| **Type of course** | Compulsory |
| **Level of course** | Postgraduate |
| **Year of study** | 1st |
| **Semester/trimester** | 1st |
| **Number of credits allocated** | 7,5 |
| **Name of lecturer** | Economides George, Professor, Dept of International and European Economic Studies |
| **Objective of the course (preferably expressed in terms of learning outcomes and competences)** | The main goal of the course is for students to understand the relationship between the banking system and the financial markets. It focuses on how the liquidity in an economy is shaped, and what is the role of the commercial banking system in this process. The determinants of money supply are presented, whereas the various monetary policy tools as well as the role of a Central Bank are discussed. The money demand process is analyzed as well as the transmission mechanisms of monetary policy. Special attention is given to the presentation of the ECB and the Eurosystem. |
| **Prerequisites** | None |
| **Course contents** | 1. Why study Money, Banking and Financial Markets? An overview of the financial system. What is Money?<br>2. Multiple Deposit Creation and the Money Supply Process. Determinants of the Money Supply. Tools of Monetary Policy. What should Central Banks Do? Monetary Policy Goals, Strategy and Tactics.<br>3. The Demand for Money. The IS-LM model. Monetary and Fiscal Policy in the IS-LM model. Aggregate Demand and Supply Analysis.<br>4. Transmission Mechanisms of Monetary Policy: The Evidence.<br>5. Money and Inflation.<br>6. Rational Expectations: Implications for policy.<br>7. The Foreign Exchange Market. The International Financial System.<br>8. |
| **Recommended reading** | Mishkin S. F. [2013]: The Economics of Money, Banking and Financial Markets, 10th edition, Pearson Education, Inc., Boston.<br>Begg D., S. Fischer and R. Dornbusch [2005]: Economics, McGraw-Hill, London, 8th edition.<br>Blanchard O., A. Amighini and F. Giavazzi [2010]: Macroeconomics-A European Perspective, Prentice Hall International, Inc., New Jersey. |

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| **Teaching methods** | Teaching in the class with physical presence and the use of slides. |
| **Assessment methods** | Final exam (100%). |
| **Language of instruction** | Greek/English |

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|---|---|
| **Course title** | **FINANCIAL REPORTING AND ANALYSIS** |
| **Course code** | m44104f |
| **Type of course** | Compulsory |
| **Level of course** | Postgraduate |
| **Year of study** | 1st |
| **Semester/trimester** | 1st |
| **Number of credits allocated** | 7,5 |
| **Name of lecturer** | Siougle Georgia, Professor, Dept of Accounting and Finance |
| **Objective of the course (preferably expressed in terms of learning outcomes and competences)** | The aim of the course is to guide students in the area of Financial Reporting. The students taking this course should be able to evaluate alternatives and base their decisions by having a good understanding about the concepts and techniques of IFRS reporting practices. The key accounting issues will be explained considering rapid changes in the economic environment and global markets. |
| **Prerequisites** | No |
| **Course contents** | Key components of financial reporting are discussed:<br>• Financial Reporting and Accounting Standards (IFRS)<br>• Conceptual Framework for Financial Reporting<br>• Statement of Financial Position, P &L, , OCI and Statement of Cash Flows.<br>• Journal entries, accounting transactions, general ledges, accrual accounting, recognition of revenues and expenses.<br>• Cash and Receivables. Short term investment, receivables, expected credited losses (IFRS 9)<br>• Valuation of Inventories<br>• PPE, Recognition, Measurement, Depreciation, Impairment and Depletion<br>• Intangible Assets, Recognition, Measurement, Depreciation, Impairment<br>• Investments-Financial Instruments- (IFRS 9), (Financial Assets, Financial Liabilities, recognition, measurement, reclassification , impairment, Derivatives, Hedge Accounting)<br>• Accounting for Leases, IFRS16 , Long term Liabilities, Debt Instruments with characteristics of Equity |

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| | • Essentials of Financial Statement Analysis (profitability , liquidity, solvency) The Role of Financial Information in Valuation (EPS, Valuation multiples, discount cash flow and residual earning valuation model) |
| **Recommended reading** | Core Text : Intermediate Accounting : IFRS Edition (3rd edition)<br>Kieso, Weygandt, Warfield<br>Case Studies<br>Furthermore, the course material consists of slides and other material made available electronically or in hardcopy. |
| **Teaching methods** | Lectures, Tutorials, Case Studies |
| **Assessment methods** | Written Exams 100 % |
| **Language of instruction** | Greek |

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|---|---|
| **Course title** | **CAPITAL MARKETS & PORTFOLIO MANAGEMENT** |
| **Course code** | m44106f |
| **Type of course** | Compulsory |
| **Level of course** | Postgraduate |
| **Year of study** | 1st |
| **Semester/trimester** | 1st |
| **Number of credits allocated** | 7,5 |
| **Name of lecturer** | Tzavalis Elias, Professor, Dept of Economics |
| **Objective of the course (preferably expressed in terms of learning outcomes and competences)** | The aim of this course is to introduce students to the modern tools of investment analysis and appraisal, including investment decision under certainty and under uncertainty, pricing of risk, portfolio management, and asset pricing. It also covers topics on pricing fixed income securities, the term structure of interest rates and bond portfolio management. The course includes demonstrations/applications of the above techniques using computer software to see how they can be used, in practice. At the end of the course, the students would have learned the tools of the modern investment analysis and become familiar with their application, in practice. |
| **Prerequisites** | None |
| **Course contents** | Investment decisions under certainty, Investment decisions under uncertainty, Mean-variance portfolio analysis, The Capital Asset Pricing Model, Factor models and the Arbitrage Pricing Theory, Bond Markets, The term structure of interest rates: theory and practice, Bond portfolio management and International capital markets and portfolio management. |

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| **Recommended reading** | Bodie Z., A. Kane and A. Marcus (2009), Essentials of Investments<br>Copeland T. and J. Weston and K. Shastri (2005), Financial Theory and Corporate Policy<br>Danthine J. and Donaldson (2002), Intermediate Financial Theory<br>Fabozzi, F., Kolm. P., Pachamanova, D and Focardi, S. (2007), Robust Portfolio Optimization and Management, Wiley.<br>Fabozzi F. (2016), Bond Markets, Analysis and Strategies, Pearson<br>Luenberger D. (1999), Investment Science |
| **Teaching methods** | Lecturing, laboratory practicals, tutorials and external seminars |
| **Assessment methods** | Written exam and assignments |
| **Language of instruction** | Greek / English |

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| **Course title** | **QUANTITATIVE METHODS** |
| **Course code** | m13105f |
| **Type of course** | Compulsory |
| **Level of course** | Postgraduate |
| **Year of study** | 1st |
| **Semester/trimester** | 1st |
| **Number of credits allocated** | 7,5 |
| **Name of lecturer** | Vrontos Ioannis, Ass. Professor, Dept of Statistics |
| **Objective of the course (preferably expressed in terms of learning outcomes and competences)** | The aim of this course is to provide students with the learning of using appropriate statistical and econometric methods, models and techniques required for data analysis. After successfully completing the course, students will be able to:<br>• Know and apply a wide range of econometric models to empirical economic and financial problems<br>• Learn the fundamentals in statistical/econometric inference allowing them to understand which type of analysis is necessary and how it can be correctly implemented<br>• Estimate the parameters of statistical and econometric models<br>• Conduct hypothesis testing and construct confidence intervals for model parameters<br>• Estimate regression and time series models, construct predictions and interpret the results of econometric analysis appropriately<br>• Estimate structural change-point and panel data models and apply them to empirical problems<br>• Be able to apply, using the R package, econometric models to empirical economic/financial problems and applications |

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| **Prerequisites** | At least a graduate course on Econometrics and/or a course on Introduction in Statistics (m13201s). |
| **Course contents** | The course introduces and presents the fundamental theory of statistical and econometric models, methods and techniques, which are necessary in the research and empirical analysis of economic and financial data. First, the theory of regression models, single and multiple linear regression, is presented. The variable/model selection problem, the use of dummy variables, and the problem of multicollinearity are examined. Emphasis is given on the application of the theory, estimation of the model parameters, examination of the assumptions of residuals using diagnostic tests, and the interpretation of results. The theory and empirical application of time series models are introduced and presented in detail, and the Box-Jenkins methodology is developed. The course introduces the generalized linear models (logit/probit and log-linear models) used for the analysis of binomial and Poisson data, respectively. Break-point models and the corresponding tests for structural changes in economic data are presented and developed. Finally, panel data models, and the techniques for estimating their parameters are presented. The underline theory, methods and models are implemented to empirical economic and financial problems using the statistical package R. |
| **Recommended reading** | • Stock, J.H., and Watson, M.W. (2017). Introduction to Econometrics, 3rd edition, Pearson<br>• Weisberg, S. (2005). Applied Linear Regression, 3rd edition, Wiley<br>• Fox, J., and Weisberg, S. (2011). An R Companion to Applied Regression, 2nd edition, SAGE Publications Inc.<br>• Hamilton, J.D. (1994). Time Series Analysis. Princeton, New Jersey: Princeton University Press<br>• Enders, W. (2010). Applied Econometric Time Series. New York: Wiley<br>• Cowpertwait, P.S.P., and Metcalfe V. A.(2009). Introductory Time Series with R. New York: Springer Texts in Statistics<br>• Cryer, J.D., and Chan K.S. (2010). Time Series Analysis with Applications in R. Springer Texts in Statistics<br>• Gujarati, D.N. (2008). Basic Econometrics. New York: McGraw-Hill<br>• Pindyck, R.S. and Rubenfeld, D.S. (1991). Econometric Models and Economic Forecasts. New York: McGraw-Hill<br>• Shumway, R.H. and Stoffer, D.S. (2011). Time Series Analysis and Its Applications with R Examples. New York: Springer Texts in Statistics<br>• Tzavalis, E. (2008). Econometrics, AUEB |
| **Teaching methods** | One three-hour lecture per week, study exercises, and programming exercises as homework (some to be submitted). |
| **Assessment methods** | The final grade is the average of the final examination grade (weight 80%) and the grade of the study and programming exercises to be submitted (weight 20%), provided that the final examination grade is at least 5/10. Otherwise, the final grade equals the final examination grade. |
| **Language of instruction** | Greek/English |

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| **Course title** | **BANKING AND RISK MANAGEMENT** |
| **Course code** | m44108f |
| **Type of course** | Compulsory |
| **Level of course** | Postgraduate |
| **Year of study** | 1st |
| **Semester/trimester** | 2nd |
| **Number of credits allocated** | 6 |
| **Name of lecturer** | Sakellaris Ploutarchos, Professor, Dept. of Economics |
| **Objective of the course (preferably expressed in terms of learning outcomes and competences)** | By the end of the course, the students should be able to:<br>• master the fundamentals of risk management (except for credit risk management) as well of compliance to bank regulatory procedures.<br>• Identify and measure risk exposure for a FI, applying methods such as Value-at-Risk (VaR) and Expected Shortfall.<br>Understand and implement hedging strategies to offset portfolio and asset risk positions using derivative instruments such as futures, forwards, options, and swaps. |
| **Prerequisites** | Introductory probability and statistics. |
| **Course contents** | A series of financial crises since 2007 has demonstrated the importance of recognizing and managing the multiple risks with which Financial Institutions (FI) are faced. This course will provide an integrated approach to managing risks faced by FIs: their recognition, measurement, and mitigation. We will place emphasis on the role that derivative products play in mitigating risk. The risk management framework of FIs consists both of internal systems as well as external rules of prudential supervision. We will cover both these dimensions. Innate deficiencies have led to failures in both self-regulation of FIs as well as in their official supervision. In the course, we will examine solutions to the risk management problems facing the modern financial system. |
| **Recommended reading** | J. C. Hull, Risk Management and Financial Institutions, (Wiley Finance), 6th edition, 2023<br>Anthony Saunders, Marcia Cornett and Otgo Erhemjamts, Financial Institutions Management: A Risk Management Approach, McGraw Hill, 10th edition, 2021.<br>Steve Allen, Financial Risk Management: A Practitioner's Guide to Managing Market and Credit Risk (Wiley Finance), 2nd edition, 2013.<br>G. Sapountzoglou and C. N. Pentotis, Banking Economics, (vols A and B), G. Benou Editions, 2009 (In Greek) |

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| | Nikolaos Th. Mylonas, Derivative Products and Markets, Hellenic Banks Association and Dardanos, 2005 (In Greek) |
| **Teaching methods** | Lectures, laboratory sessions, assistance sessions, computer applications |
| **Assessment methods** | Exams, problem sets, computer assignments |
| **Language of instruction** | Greek |

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| **Course title** | **FINANCIAL DERIVATIVES** |
| **Course code** | m44107f |
| **Type of course** | Compulsory |
| **Level of course** | Postgraduate |
| **Year of study** | 1st |
| **Semester/trimester** | 2nd |
| **Number of credits allocated** | 6 |
| **Name of lecturer** | Topaloglou Nikolaos, Professor, Dept of International and European Economic Studies |
| **Objective of the course (preferably expressed in terms of learning outcomes and competences)** | The aim of this course is to introduce students to the theoretical and practical aspects of financial derivatives.<br>• Specifically, the course examines the pricing and use of financial derivatives including options, forward contracts, futures contracts, swaps and credit derivatives.<br>• The course will extensively focus on the theory and applications of derivatives in speculation and risk management.<br>• Moreover, the course includes a computational demonstration of the pricing models with excel. |
| **Prerequisites** | The course *Capital Markets and Portfolio Management* is prerequisite. |
| **Course contents** | The course covers the main financial derivatives: futures and futures on various underlying values. Options on shares, indices, currencies and futures. Interest rate swaps and foreign exchange. The focus of the analysis are pricing and hedging derivatives or derivatives positions by financial institutions. Special topics covered include, inter alia, the Black - Scholes model, binomial trees, hedging deltas, as well as various applications such as real rights in finance. |
| **Recommended reading** | John C. Hull “Options, Futures, & Other Derivatives” Prentice Hall.<br>Jarrow & Turnbull “Derivative Securities,” South Western.<br>Robert Whaley, “Derivatives: Markets, Valuation, and Risk Management”, Wiley.<br>Robert L. McDonald “Derivative Markets,” Addison-Wesley Series in Finance. |

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| | Don M. Chance & Robert Brooks, "An Introduction To Derivatives And Risk Management" Thomson Southwest Learning.<br>Salih N. Neftci "An Introduction to the Mathematics of Financial Derivatives," Academic Press.<br>Paul Wilmott "Derivatives: The Theory and Practice of Financial Engineering," Wiley. |
| **Teaching methods** | Lectures, assignments |
| **Assessment methods** | Problem sets, assignments, exams. |
| **Language of instruction** | Greek/English |

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| **Course title** | **CORPORATE FINANCE** |
| **Course code** | m44110f |
| **Type of course** | Compulsory |
| **Level of course** | Postgraduate |
| **Year of study** | 1st |
| **Semester/trimester** | 2nd |
| **Number of credits allocated** | 6 |
| **Name of lecturer** | Pagratis Spyridon, Associate Professor, Dept of Economics |
| **Objective of the course (preferably expressed in terms of learning outcomes and competences)** | The students taking this course should be able to:<br>1. Identify turning points in economic policy and analyse their material impact on funding conditions and corporate decisions to access external financing,<br>2. Understand the new era of extraordinary policy interventions by central banks and appraise their impacts on asset valuations and the cost of corporate financing,<br>3. Value investment projects and capital budgeting decisions and identify factors that affect corporate decisions to access different forms of financing,<br>4. Assess alternative ways of accessing capital markets, as well as corporate payout policies to shareholders, i.e share buybacks and dividend policy.<br>5. Identify issues of first-order importance that are relevant to corporate financing, combine them to make informed decisions and negotiate funding terms with financiers. |
| **Prerequisites** | The course *Capital Markets and Portfolio Management* is prerequisite. |
| **Course contents** | **Section 1. Financial Statements and Key Financial Ratios**<br>• Current issues and basic principles.<br>• Balance sheet (B/S), profit and loss (P&L), and cash flow statement (CFS). |

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| | • Key performance indicators (KPI): liquidity, solvency, profitability, and cash flow ratios.<br>**Section 2. Capital Budgeting and Investment Appraisal**<br>• Loan amortization (annuities), stock valuation (perpetuities)<br>• WACC, and the internal rate of return (IRR) in practice. Data sources: Equity risk premium (ERP), sectoral betas and operating income growth rates.<br>• Free cash flows and investment appraisal: working capital, sunk costs, and tax shields.<br><br>**Section 3. Capital Structure and Optimal Funding Mix**<br>• Empirical patterns of corporate financing and possible explanations. Types of financial instruments and markets.<br>• Modigliani-Miller irrelevance proposition. An options-based approach to debt and equity valuations. The weighted average cost of capital (WACC) and WACC fallacies.<br>• Capital structure under financial frictions. Debt-overhang, underinvestment problems and the role of financial restructuring.<br>• Equity capital raising and the mechanics of rights issues.<br>• Incentives, asymmetric information and the pecking-order of financing choices. |
| **Recommended reading** | *The course packet* contains an extensive set of self-contained slides (approx. 150 slides) that are structured in three main sections, following the section list above. It also includes articles from business press (that students need to follow consistently). These are optional but highly recommended to expedite fluency in current financial affairs and galvanize finance-savvy profiles.<br><br><u>Auxiliary textbooks:</u><br>1. Jean Tirole. “The Theory of Corporate Finance”, Princeton University Press.<br>2. Brealey, Myers, and Allen. "Principles of Corporate Finance", McGraw-Hill, New York, NY.<br>3. A series of topical articles from financial-press (mainly from Financial Times) that are frequently updated and links provided in relevant lecture slides. |
| **Teaching methods** | Lecturing will be supported by video presentations, in-class case analyses, and occasional invited lectures by market experts. Students are expected to be always prepared for class and to contribute to class discussions. |
| **Assessment methods** | The course is assessed through a final exam which accounts for 60% of the course grade and the case study counts for 40%. The final exam is closed books and closed notes and lasts for 3 hours. It covers material from the entire course, including occasional invited lectures. Students are encouraged to use a calculator for the exam. This element is geared towards assessing students’ ability to present concisely and quantitatively credible solutions to explicit corporate finance problems. |
| **Language of instruction** | Greek/English |

## ELECTIVE OFFERED COURSES

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| **Course title** | **COMPANIES' AND BANKS' VALUATIONS AND MERGERS** |
| **Course code** | m44225f |
| **Type of course** | Elective |
| **Level of course** | Postgraduate |
| **Year of study** | 1st |
| **Semester/trimester** | 2nd |
| **Number of credits allocated** | 6 |
| **Name of lecturer** | Liapis Konstantinos, Professor, University of Panteion, Dept of Economic and Regional Development |
| **Objective of the course (preferably expressed in terms of learning outcomes and competences)** | The objective of the course are the valuations and the mergers & acquisitions of companies and Banks. Issues such as: Accounting for transactions in financial statements, corporate finance, capital and alternative investments, The conceptual and regulatory framework for financial reporting, Analysing and interpreting the financial statements of single entities and groups, capital structure and operations decisions, acquisition methods and strategies, corporate restructuring, stock valuations, terms of m&a's transactions and shareholders' agreements.<br>The desired learning outcomes are a full understanding of the concepts, tools, and methods of valuing companies as well as technical mergers & acquisitions, they will also be able to apply the above knowledge, tools, and methods in practice. |
| **Prerequisites** | Without being a prerequisite, an introductory course in Accounting or Financial Analysis would be helpful. |
| **Course contents** | Thematic units of the course are:<br>• Financial reporting, The concepts and principles of groups and consolidated financial statements, Impairment of assets, Calculation and interpretation of accounting ratios and trends to address users' and stakeholders' needs, Preparation of consolidated financial statements for a simple group, Present data and information effectively, using the appropriate tools<br>• Valuation, financial analysis, and corporate financing.<br>• Methods of capital structure, equity valuation and price changes in stock markets after changes in capital<br>• Accounting forecasts, provisions, and adjustments to the financial statements<br>• Business plans and proforma financial statements<br>• The types, methods and techniques of mergers and acquisitions<br>• Business Mergers and Inter-Corporate Investments<br>• Consolidation accounting<br>• Global operations, multinational corporations (MNEs) and banks (MNBs)<br>• Decision making for equity investments<br>• Mergers and acquisitions and corporate restructuring |

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| | • Venture capital |
| **Recommended reading** | • Λιάπης Κ, Χύτης Ε, Γαλανός Χ Λογιστική Εταιρειών, Φορολογία και Εταιρικοί μετασχηματισμοί, 2021, εκδόσεις Μπένου.<br>• Brigham, E., & Ehrhardt, M. (2013). Financial management: theory & practice. Cengage Learning.<br>• CFA Program Level II, Corporate Finance, Mergers and Acquisitions, 2021, https://www.cfainstitute.org/en/membership/professional-development/refresher-readings/mergers-acquisitions<br>• Damodaran Aswath, Investment Valuation, Third Edition, Wiley Finance<br>• Fernandez Pablo, The Equity Premium in 150 Textbooks, IESE Business School, November 16, 2010<br>• Gaughan, P. A. (2010). Mergers, acquisitions, and corporate restructurings. John Wiley & Sons.<br>• International Accounting Standards Board. (2015). A Guide through IFRS® (Green Book). Kluwer.<br>• EDUCATIONAL MATERIAL ON FAIR VALUE MEASUREMENT, IFRS Foundation, 2013, https://www.ifrs.org/-/media/feature/supporting-implementation/ifrs-13/education-ifrs-13-eng.pdf<br>• |
| **Teaching methods** | Lectures – discussions, case studies, methods' applications using excel |
| **Assessment methods** | Homework's per thematic unit, during the lectures:<br>40% of the final grade<br>Final exam at the end of the course:<br>60% of the final grade. |
| **Language of instruction** | Greek and English |

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| **Course title** | **LARGE DATA AND STATISTICAL LEARNING** |
| **Course code** | m44227f |
| **Type of course** | Elective |
| **Level of course** | Postgraduate |
| **Year of study** | 1st |
| **Semester/trimester** | 2st |
| **Number of credits allocated** | 6 |
| **Name of lecturer** | Papailias Fotios, Senior Lecturer, King's Business School |
| **Objective of the course (preferably expressed in terms of learning outcomes and competences)** | After successful completion of this course the students must have a good understanding of:<br>• computational inference,<br>• time series forecasting,<br>• data features (seasonalities, nonstationarities, etc.), |

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| | • how machine learning methods work (supervised and unsupervised machine leaning).<br><br>Furthermore, students are expected to obtain the necessary skills to be able to:<br>• use scientific software and develop codes independently,<br>• collect, handle and organise large panels of data,<br>• visualise data and extract features,<br>• apply machine learning techniques in practice and interpret the output in economic and finance applications. |
| **Prerequisites** | None formal pre-requisite, a basic level of maths/stats and econometrics is required. |
| **Course contents** | This course is designed to introduce students to the concepts of large data handling and analysis with machine learning techniques. We start with computational analysis and inference and discuss the Monte Carlo, Bootstrap, k-fold cross-validation and recursive and rolling estimation methodologies. We provide a solid basis for time-series forecasting based on predictive linear regressions as well as using the Kalman Smoother. Next, we discuss large data handling techniques and discuss its features (seasonalities, nonstationarities). We discuss how unsupervised machine learning methodologies (k-means clustering, principal component analysis and dynamic factor analysis) could be applied in economics and finance forecasting applications (including the construction of Financial Conditions Indexes and Uncertainty Indicators). Next, we introduce the penalised regression methodologies of ridge, lasso and elastic net. We extend our discussion to unbalanced datasets and use bridge equations, MIDAS and U-MIDAS models as suggested remedies. Finally, our special topics include adaptive learning and modelling and applications of machine learning in portfolio selection.<br>On top of our theory discussions, the course has a "hands-on" approach where all these methods applied in real data using the R Project for Statistical Analysis as the main scientific software. |
| **Recommended reading** | Main reading: supplied material.<br>Supplementary readings include:<br>• James, G., Witten, D., Hastie, T., Tibshirani, T. (2013). An Introduction to Statistical Learning with Applications in R. Springer, New York.<br>• Hyndman, R.J., Athanasopoulos, G. (2019). Forecasting: Principles and Practice, 3rd Edition, OTexts: Melbourne, Australia.<br>• Sheppard, K. (2020). Financial Econometrics Notes. University of Oxford.<br>And various academic papers discussed throughout the module. |
| **Teaching methods** | • Weekly lectures (theory & hands-on),<br>• Weekly tutorials (theory & hands-on)<br>• Learning-by-doing approach. |
| **Assessment methods** | Weights in squared brackets.<br>• [10%] Weekly Assignments,<br>• [30%] Project 1 (essay and code),<br>• [30%] Project 2 (essay and code),<br>• [30%] Final Exam. |

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| **Language of instruction** | English (occasional use of Greek). |

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| **Course title** | **MARKET MICROSTRUCTURE WITH STATISTICAL AND COMPUTATIONAL METHODS** |
| **Course code** | m44226f |
| **Type of course** | Elective |
| **Level of course** | Postgraduate |
| **Year of study** | 1st |
| **Semester/trimester** | 2nd |
| **Number of credits allocated** | 6 |
| **Name of lecturer** | Skouras Spyros, Professor, Dept. International and European Economic Studies |
| **Objective of the course (preferably expressed in terms of learning outcomes and competences)** | In this course we will study several aspects of trading in modern financial markets, including the following:<br>• What statistical facts about financial markets are actually practically useful for investors?<br>• What is a scientific approach to investing? How are 'quant trading' models constructed, implemented, and evaluated and what is the role of statistical and computational methods in these?<br>• What is market microstructure and how do the details of market organization influence trading costs and investments more generally? Here we will explain that market microstructure is the analysis of how trading happens in practice and the impact that practical details have on how prices are formed and market participants interact. This section will be very useful for students interested in developing hands on experience with trading.<br><br>We will discuss several major asset classes including cryptos and we will touch on themes relevant to Fintech. |
| **Prerequisites** | |
| **Course contents** | **Part I: Quantitative Analysis of Investments**<br><br>**I.1: Key empirical / statistical facts about financial markets**<br>In this section we will use simple data analysis, especially descriptive statistics and graphs to develop a bird's eye view of the historical behavior of financial markets. The motivation for this section is that a good understanding of the historical experience is essential to any use of sophisticated statistical and computational methods in investing. Specific topics include:<br>a) The size of financial markets<br>b) Historical returns of various aspects of financial markets<br>i. Cash / Inflation |

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| | ii. Equities<br>iii. Fixed Income<br>iv. Risk Premium<br>v. Currencies<br>vi. Real estate – housing<br>vii. Gold<br>viii. Cryptocurrencies & Bitcoin<br><br>**I.2: Quant trading models, design and implementation**<br>a) Baseline quant trading model with and without benchmarks<br>b) Operationalizing trading models<br>a. General Considerations<br>b. Forecasting Returns<br>c. Calibrating Risk Aversion<br>d. Estimating Covariance Matrixes<br>e. Transaction Costs<br><br>c) Implementation and limitations of baseline quant trading model |
| **Recommended reading** | The students will be given lecture notes and simulation software. In addition, we suggest the following books:<br>• L. Harris, "Trading and Exchanges – Market Microstructure for Practitioners", Oxford University Press, 2003<br>• J. Hasbrouck, "Empirical Market Microstructure – Economic and Statistical Perspectives on the Dynamics of Trade in Securities Market", Teaching Notes, 2003<br>• M. O'Hara, "Market Microstructure Theory", Basil Blackwell, Cambridge, 1995. |
| **Teaching methods** | Lectures and assignment |
| **Assessment methods** | Written Group assignment and individual oral examination |
| **Language of instruction** | Greek / English |

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| **Course title** | **SPECIAL ISSUES IN FINANCE AND INVESTMENTS** |
| **Course code** | m44224f |
| **Type of course** | Elective |
| **Level of course** | Postgraduate |
| **Year of study** | 1st |
| **Semester/trimester** | 2nd |
| **Number of credits allocated** | 6 |
| **Name of lecturer** | Varthalitis Petros, Ass. Professor, Dept of Economics<br>Tzavalis Elias, Professor, Dept. of Economics |

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| | Topaloglou Nikolaos, Professor, Dept. of International and European Economic Studies |
| **Objective of the course (preferably expressed in terms of learning outcomes and competences)** | The objective of the course is students after its completion:<br><br>• to acquire skills in modern theoretical and applied tools for understanding international financial crises and to gain knowledge in international markets and economic relations, as well as in portfolio management of stocks under exchange rate risk.<br>• to acquire analytical and technical skills to assess exchange rate risk and other investment risks in the international environment, as well as currency speculative attacks.<br>• be capable of understanding how economic policy (monetary/exchange rate and/or fiscal) affects an economy in the international financial system, both during normal and crises periods.<br>• to acquire modern knowledge, skills, and tools used in international investment institutions (e.g., private banks and investment firms), as well as in international organizations and economic policy institutes (e.g., central banks, OECD, International Monetary Fund).<br>• VaR (Value-at-Risk VaR) applications: Applications of VaR to stock, bond and foreign exchange Portfolios, economic capital, and credit, liquidity and operational risks.<br><br>**The acquisition of the following skills**: Analytical methods and computational tools (e.g., Python/Matlab) for processing macroeconomic and financial data, applying them to understand the transmission mechanisms of economic crises, and analyzing economic policies to address such crises. Additionally, the ability to forecast exchange rate changes, manage portfolios with foreign stocks and exchange rate risk, and evaluate stock prices and returns in an international environment. At the end of the course, the students will have become familiar with techniques and concepts on international investing risk management procedures and diversification, performance evaluation procedures and security selection, investment strategies accounting for taxes and inflation, investor constrains, investment policies and VaR procedures. VaR procedures for asset portfolios and loans management will be demonstrated through an econometric package. |
| **Prerequisites** | None |
| **Course contents** | This course is designed for students aspiring to build international careers in financial and policy institutions, such as private and investment banks, central banks, and other economic policy institutions. It provides a comprehensive introduction to international and macro finance, with a particular emphasis on money, banking, and the macroeconomic forces that influence financial markets and exchange rate fluctuations.<br>Throughout the course, students will examine key case studies of major international macroeconomic and financial crises, including the Global Financial Crisis (2008-09), the Irish Banking Crisis (2009-10), and the European Debt Crisis (2010). These examples offer a foundation for understanding the complex dynamics behind financial turmoil. In addition, students will learn to apply analytical and technical tools to process macroeconomic and financial data before, during, and after such crises.<br>Having acquired the necessary tools to understand financial and macroeconomic crises, next the course shifts focus to practical techniques for |

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| | managing stock portfolios in an international context. Students will explore strategies for mitigating exchange rate risk and managing globally diversified portfolios. The course will also introduce models that assess stock market risk in the presence of exchange rate volatility. These models are applied to international investment decisions and are adapted to scenarios where traditional exchange rate theories, such as purchasing power parity or monetary theory, may not hold. |
| **Recommended reading** | **Suggested bibliography:**<br>Markus K. Brunnermeier and R. Reis (2023): A crash course on crises: macroeconomic concepts for run-ups, collapses and recoveries. Princeton University Press<br><br>Carmen M. Reinhart and Kenneth Rogoff (2009). This time is different: Eight Centuries of Financial Folly. Princeton University Press.<br><br>Stephanie Schmitt-Grohe, Martin Uribe and Michael Woordford (2022). International Macroeconomis: A Modern approach. Princeton University Press.<br><br>Copeland T., Weston J. and Shastri K, "Financial Theory and Corporate Policy", Addison- Wesley.<br><br>Butler, K.C. (2000), Multinational Finance, South-Western<br><br>**Related academic journals**:<br>Journal of International Economics, International Economic Review, Journal of Finance, Journal of International Money and Finance, Journal of Money Credit and Banking |
| **Teaching methods** | Lectures, assignments |
| **Assessment methods** | Problem sets, assignments, exams. |
| **Language of instruction** | Greek/English |

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| **Course title** | **SPECIAL TOPICS IN BANKING** |
| **Course code** | m44223f |
| **Type of course** | Elective |
| **Level of course** | Postgraduate |
| **Year of study** | 1st |
| **Semester/trimester** | 2nd |
| **Number of credits allocated** | 6 |

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| **Name of lecturer** | Vasia Panousi, Associate Professor, Dept of International and European Economic Studies |
| **Objective of the course (preferably expressed in terms of learning outcomes and competences)** | Understanding the role of the banking sector in the creation, transmission, and amplification of international financial crises. Critical understanding of recent examples and empirical data on banking functions, banking failures, and banking supervision and regulation. |
| **Prerequisites** | Program courses taught during the previous semesters. |
| **Course contents** | 1. Overview of the banking sector.<br>2. The role of central banks.<br>3. Banks and financial crises: historical experience.<br>4. Crisis transmission mechanisms: budget constraints, net worth declines, credit crunches.<br>5. Crisis amplification mechanisms: bank leverage, fire sales, asset price spirals, systemic risk.<br>6. Crisis causes: mistakes, moral hazard.<br>7. Maturity mismatch and bank runs.<br>8. Leverage and information panics.<br>9. Bank interconnectedness, counterparty risk, and bank panics.<br>10. Economic policy of banking regulation and supervision.<br>11. Technological developments, AI, and the future of banking.<br>12. Banking in China and developing economies. |
| **Recommended reading** | Presentation slides and additional bibliography per lecture/seminar. |
| **Teaching methods** | Weekly lectures. |
| **Assessment methods** | The final grade will be determined 30% by class participation and 70% by the final exam. |
| **Language of instruction** | Greek/English |

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| **Course title** | **SUSTAINABLE FINANCE** |
| **Course code** | m44228f |
| **Type of course** | Elective |
| **Level of course** | Postgraduate |
| **Year of study** | 1st |
| **Semester/trimester** | 2nd |
| Number of credits allocated | 6 |
| **Name of lecturer** | Nikolas Topaloglou, Professor at AUEB,<br>George Cristodoulakis, Professor at Alliance Manchester Business School |
| **Objective of the course (preferably expressed in terms of** | Students should be able to:<br>• Explore the evolving sustainable investing landscape |

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| **learning outcomes and competences)** | • Understand how to incorporate ESG factors into investment decisions<br>• Gain insights into the climate risk inherent in investment opportunities<br>• Price green bonds<br>• Evaluation of sustainable investments |
| **Prerequisites** | Financial Theory, Portfolio Management |
| **Course contents** | Sustainable Investing will equip you with the insights, frameworks, and skills to evaluate environmental, social, and governance (ESG) factors and measure and manage impact resulting from investments. You will explore the evolving sustainable investing landscape, understand how to incorporate ESG factors into investment decisions, gain insights into climate risk and how to incorporate those implications into financial models, and develop your own perspective on the interaction of investing and impact. Indicatevely:<br><br>1. The genesis of sustainability risk (NT)<br>2. Regulatory response and the EU Taxonomy (NT)<br>3. Sustainability risk: definition, measurement, factors (ΓΧ)<br>4. ESG ratings (ΓΧ)<br>5. ESG equity portfolio construction (NT)<br>6. Sustainable equity financing and pricing (NT)<br>7. Smart beta equity trading (NT)<br>8. Impact of ESG on credit risk and ratings (ΓΧ)<br>9. Green Bonds and the Green Bond Standard (ΓΧ)<br>10. Sustainability bonds and the pricing of sustainability-linked bonds (ΓΧ)<br>11. Climate risk credit finance (ΓΧ)<br>12. Investment project appraisal under sustainability risk (NT) |
| **Recommended reading** | "Principles of Sustainable Finance", Dirk Schoenmaker and Willem Schramade, Oxford University Press, 2019<br>"Quantitative Methods for ESG Finance", Cyril Shmatov and Cino Robin Castelli, Wiley 2023<br>"Sustainable Wealth Management", Karen Wendt and Bernd Villhauer (eds.), Springer, 2024<br>"Handbook of Sustainable Finance", Thierry Roncalli, available free online (http://www.thierry-roncalli.com/SustainableFinanceBook.html) |
| **Teaching methods** | Lectures, assignments |
| **Assessment methods** | assignments, exams. |
| **Language of instruction** | Greek/English |

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| **Course title** | **COMPUTATIONAL ECONOMETRICS IN ECONOMICS AND FINANCE** |
| **Course code** | m13107s |
| **Type of course** | Elective |
| **Level of course** | Postgraduate |
| **Year of study** | 1st |
| **Semester/trimester** | 1st |
| **Number of credits allocated (based on the student workload required to achieve the objectives or learning outcomes)** | 6 |
| **Name of lecturer** | Dendramis Ionnnis, Assoc. Professor, Dept. of Economics |
| **Objective of the course (preferably expressed in terms of learning outcomes and competences)** | 1. **Effective Understanding of Time Series**: Students will gain an in-depth understanding of critical characteristics of time series, such as stationarity, causality, and temporal dependence. They will comprehend how these aspects affect economic data and will develop practical skills to apply these concepts to real-world problems.<br>2. **Deep Understanding of Economic and Financial Concepts**: Students will acquire a deep understanding of fundamental concepts like risk and expected return and how these concepts relate to the behavior of economic and financial series. This will enhance their ability to analyze and manage uncertainty in financial markets.<br>3. **Practical Familiarity with Numerical Techniques**: Students will gain hands-on experience in applying numerical techniques and theoretical models for analyzing economic and financial series. They will use modern computational tools to develop and test econometric models with real-world data.<br>4. **Development of Forecasting Skills**: Students will develop the ability to forecast economic series using large databases, leveraging advanced machine learning and econometric techniques to improve the accuracy of their predictions in economic and financial environments.<br>5. **Highlighting Modern Econometric Techniques**: Students will understand the advantages of modern econometric techniques in making optimal decisions in economics and finance. They will explore how data analysis can enhance strategic decision-making and reduce uncertainty in various economic scenarios. |
| **Prerequisites** | Undergraduate Econometrics and Statistics |
| **Course contents** | **Introduction to Time Series**<br>• **Basic Concepts**: Stationarity, variance, and other fundamental properties of time series.<br>• **Autocorrelation Analysis**: Understanding and using Autocorrelation Functions (ACF) and Partial Autocorrelation Functions (PACF) to identify patterns in time series data.<br>• **Tools and Software**: Introduction to tools used for time series analysis, such as R and Python. |

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| | • **Construction of AR, MA, and ARIMA Models**: Theory and practical application in developing Autoregressive (AR), Moving Average (MA), and mixed (ARIMA) models.<br>• **Model Estimation and Diagnostics**: Techniques for parameter estimation, diagnostic checks, and evaluation of model suitability.<br>• **ARIMA Forecasting**: Application of ARIMA models for short- and long-term forecasting.<br>**Dynamic Multivariate Models**<br>• **Causality**: Causality analysis using Granger Causality to explore the relationships between variables.<br>• **VAR Models**: Theory and application of Vector Autoregressive (VAR) models for analyzing the interdependence between multiple time series.<br>**Volatility Models**<br>• **Introduction to GARCH**: Theory of Generalized Autoregressive Conditional Heteroskedasticity (GARCH) models for volatility analysis.<br>• **GARCH Extensions**: In-depth study of extensions such as EGARCH (Exponential GARCH) and TGARCH (Threshold GARCH) for analyzing asymmetries in return volatility.<br>• **Applications in Large Datasets**: Use of these models in large and complex financial datasets for a better understanding of volatility.<br>**Risk Analysis and Forecasting**<br>• **Risk Measurement**: Theory and application of risk measurement methods, such as Value at Risk (VaR) and Expected Shortfall.<br>• **Application of Econometric Models**: Use of econometric models for estimating and forecasting risk in financial portfolios.<br>• **Volatility, Risk, and Return**: Analysis of how return volatility is related to risk and expected return in investments.<br>**Non-Linear Time Series Models**<br>• **Introduction to Non-Linear Models**: Theory and applications of threshold models and Markov switching models for studying non-linear patterns.<br>**Advanced Forecasting Techniques**<br>• **Machine Learning and Neural Networks**: Introduction to machine learning techniques and neural networks for improving forecasting accuracy in economic data.<br>• **Big Data Applications**: Use of big data in forecasting economic and financial series, and how it can enhance model accuracy.<br>• **Model Combination for Forecasting**: Approaches based on combining multiple forecasting models to improve accuracy.<br>• **Mixed Frequency Data**: Application of mixed frequency data for improving short- and long-term forecasts. |
| **Recommended reading** | Tsay, Ruey S. Analysis of financial time series, John Wiley & Sons.<br>Tsay, Ruey S. Multivariate Time Series Analysis: With R and Financial Applications, John Wiley & Sons.<br>James Hamilton, Time Series Analysis, Princeton University Press. |
| **Teaching methods** | In-depth case analysis, academic and practitioner article analysis and discussion, group works, case studies of real world situations. |
| **Assessment methods** | Comprehensive Final Exam, Assignments |
| **Language of instruction** | Greek- English |

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| **Course title** | **Python for Business Economics and Finance** |
| **Course code** | m13223f |
| **Type of course** | Elective course *(offered by other MSc)* |
| **Level of course** | Postgraduate |
| **Year of study** | 1st |
| **Semester/trimester** | 2nd |
| **Number of credits allocated** | 6 |
| **Name of lecturer** | Alexopoulos Angelos, Assist. Professor, Dept. of Economics |
| **Objective of the course (preferably expressed in terms of learning outcomes and competences)** | The objective of the course is students after its completion:<br>• Demonstrate proficiency in fundamental Python programming concepts, including data structures, control flow, and functions to be able to quantify<br>• Apply Python to solve practical problems in business, economics, and finance by developing financial models, conducting economic forecasting, and performing data-driven decision-making.<br>• Analyze financial datasets and make data-driven business decisions using both traditional and modern data analytics methods.<br><br>The acquisition of the following skills:<br>• Utilize Python's key libraries such as Pandas, NumPy, Matplotlib, and Statsmodels to manipulate, analyze, and visualize data.<br>• Effectively communicate analytical results through data visualizations and reports, enhancing decision-making capabilities in a business or financial context. |
| **Prerequisites** | Basic knowledge of programming, basic knowledge of statistics and econometrics |
| **Course contents** | This course introduces students to Python programming with a focus on its application in business, economics, and finance. Designed for beginners with very limited prior coding experience, the course covers essential Python concepts, including data structures, control flow, and functions. Students will learn how to leverage Python for data analysis, financial modeling, and economic forecasting. Through hands-on projects and real-world case studies, students will explore topics such as forecasting, risk management, and business decision-making by using traditional as well as modern data |

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| | analytics methods. Key libraries like Pandas, NumPy, Matplotlib, and Statsmodels will be used to manipulate financial datasets, visualize trends, and build predictive models. By the end of the course, students will be able to confidently apply Python programming to solve practical problems in business economics and finance, improving their analytical skills and decision-making capabilities. |
| **Recommended reading** | **Suggested bibliography**:<br>Matthes, E. (2019). *Python crash course: A hands-on, project-based introduction to programming* (2nd ed.). No Starch Press.<br>Sweigart, A. (2020). *Automate the boring stuff with Python: Practical programming for total beginners* (2nd ed.). No Starch Press.<br>Chicco, D. (2022). *Applied econometrics with Python*. Springer.<br><br>**Related academic journals:** Journal *of Statistical Software, Computational Economics, Journal of International Economics, Journal of Finance, Journal of International Money and Finance, Journal of Econometrics* |
| **Teaching methods** | Lectures in the classroom, laboratory exercises, study and analysis of literature, case study (project), writing assignments and independent study |
| **Assessment methods** | Written exam at the end of the semester (60%), assignment (project) (40%). |
| **Language of instruction** | Greek |

# DESCRIPTION OF INDIVIDUAL COURSES

## PART TIME PROGRAM

## PREPARATORY COURSES

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|---|---|
| **Course title** | **MATHEMATICS** |
| **Course code** | m44202s |
| **Type of course** | Preparatory |
| **Level of course** | Postgraduate |
| **Year of study** | 1st |
| **Semester/trimester** | 1st |
| **Number of credits allocated** | 0 |
| **Name of lecturer** | Gatsios Konstantine, Professor, Dept of Economics |
| **Objective of the course (preferably expressed in terms of learning outcomes and competences)** | The aim of the course is to provide students with the necessary mathematical tools employed in the teaching of main courses of the Programme and used in the related literature, as well as to familiarize them with the application of mathematics in addressing economic problems. |
| **Prerequisites** | None. |
| **Course contents** | The topics covered by the course are: functions and equations; the time value of money (the present and the future value of money); matrices (matrix operations, transposes and inverses, determinants, Cramer's Rule); differential calculus (derivatives, rules of differentiation; Taylor Series expansion, maxima and minima of functions of one and of more than one variables, optimization with and without constraints); integral calculus (rules of integration, definite and indefinite integrals, improper integrals). |
| **Recommended reading** | Basic:<br>Chiang A.: Fundamental Methods of Mathematical Economies, 3rd Edition, McGraw-Hill<br>Watsham, J. T. and Parramore, K.: Quantitative Methods in Finance<br>Additional:<br>Silberberg E.: The Structure of Economies: A Mathematical Analysis, Mc Graw Hill<br>Hands D. W.: Introductory Mathematical Economics |
| **Teaching methods** | Lectures, assignments. |
| **Assessment methods** | Exercise solving (there is no final examination or marking) |
| **Language of instruction** | Greek |

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|---|---|
| **Course title** | **STATISTICS** |
| **Course code** | m44201s |
| **Type of course** | Preparatory |
| **Level of course** | Postgraduate |
| **Year of study** | 1st |
| **Semester/trimester** | 1st |
| **Number of credits allocated** | 0 |
| **Name of lecturer** | Demos Antonios, Professor, Dept of International and European Economic Studies |
| **Objective of the course (preferably expressed in terms of learning outcomes and competences)** | The main objective of the course is to remind student the basic notions in statistics so that they would be able to follow a course in Quantitative Analysis or Finance. |
| **Prerequisites** | None. |
| **Course contents** | Random Variables and their Probability Distributions: Discrete and Continuous Random Variables. Joint Distributions, Conditional Distributions, and Independence. Features of Probability Distributions: Expected Value, Median, Variance, Standardizing a Random Variable. Features of Joint and Conditional Distributions, Covariance, Correlation, Variance of Sum of Random Variables, Conditional Expectation. The Normal and Related Distributions. Population, Parameters, and Random Sampling. Finite Sample Properties of Estimators. Interval Estimation and Confidence Intervals: Confidence Intervals for the Mean from a Normally Distributed Population. |
| **Recommended reading** | Tsionas, Statistics with Economic Applications, AUEB (in Greek).<br>Chalikias, Statistics, Rosili (in Greek).<br>Chatzinikolaou, Statistics for Economists, (in Greek).<br>Studenmund: Using Econometrics, Addison, Wesley, Longman<br>Wooldridge: Introductory Econometrics, Thomson.<br>Heij, et al.: Econometric Methods with Applications<br>Notes: www.aueb.gr/users/demos/mbasta.pdf |
| **Teaching methods** | Lectures coupled with exercise solving and introduction to statistical analysis with R or e-views. |
| **Assessment methods** | Exercise solving (there is no final examination or marking) |
| Language of instruction | Greek/English |

## COMPULSORY COURSES

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| **Course title** | **ECONOMICS OF FINANCIAL MARKETS** |
| **Course code** | m44103p |
| **Type of course** | Compulsory |
| **Level of course** | Postgraduate |
| **Year of study** | 1st |
| **Semester/trimester** | 1st |
| **Number of credits allocated** | 7,5 |
| **Name of lecturer** | Economides George, Professor, Dept of International and European Economic Studies |
| **Objective of the course (preferably expressed in terms of learning outcomes and competences)** | The main goal of the course is for students to understand the relationship between the banking system and the financial markets. It focuses on how the liquidity in an economy is shaped, and what is the role of the commercial banking system in this process. The determinants of money supply are presented, whereas the various monetary policy tools as well as the role of a Central Bank are discussed. The money demand process is analyzed as well as the transmission mechanisms of monetary policy. Special attention is given to the presentation of the ECB and the Eurosystem. |
| **Prerequisites** | None |
| **Course contents** | 1. Why study Money, Banking and Financial Markets? An overview of the financial system. What is Money?<br>2. Multiple Deposit Creation and the Money Supply Process. Determinants of the Money Supply. Tools of Monetary Policy. What should Central Banks Do? Monetary Policy Goals, Strategy and Tactics.<br>3. The Demand for Money. The IS-LM model. Monetary and Fiscal Policy in the IS-LM model. Aggregate Demand and Supply Analysis.<br>4. Transmission Mechanisms of Monetary Policy: The Evidence.<br>5. Money and Inflation.<br>6. Rational Expectations: Implications for policy.<br>7. The Foreign Exchange Market. The International Financial System. |
| **Recommended reading** | Mishkin S. F. [2013]: The Economics of Money, Banking and Financial Markets, 10th edition, Pearson Education, Inc., Boston.<br>Begg D., S. Fischer and R. Dornbusch [2005]: Economics, McGraw-Hill, London, 8th edition. |

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| | Blanchard O., A. Amighini and F. Giavazzi [2010]: Macroeconomics-A European Perspective, Prentice Hall International, Inc., New Jersey. |
| **Teaching methods** | Teaching in the class with physical presence and the use of slides. |
| **Assessment methods** | Final exam (100%). |
| **Language of instruction** | Greek/English |

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| **Course title** | **FINANCIAL REPORTING AND ANALYSIS** |
| **Course code** | m44104p |
| **Type of course** | Compulsory |
| **Level of course** | Postgraduate |
| **Year of study** | 1st |
| **Semester/trimester** | 1st |
| **Number of credits allocated** | 7,5 |
| **Name of lecturer** | Anagnostopoulou Seraina, Professor, University of Piraeus, Dept of Banking and Financial Management |
| **Objective of the course (preferably expressed in terms of learning outcomes and competences)** | At the end of the course, students will have a hands-on understanding of the most important elements of a set of financial statements, and should be able to use this information for financial decision-making. They should also be able to perform basic financial statements analysis into the accounts of a company, be familiar with the expected value-relevance of sustainability reporting statements complementing financial statements, and understand the fundamental factors that shape and can deteriorate the quality of earnings, and financial reporting quality more generally. |
| **Prerequisites** | None |
| **Course contents** | The course aims at introducing the students into the key concepts and elements of financial accounting in detail (assets, liabilities and shareholders' equity), and also help them make decisions as future users of financial statements. The course further covers more specialised topics in accounting, such as topics that relate to the quality of earnings, and the basic elements of financial statements analysis, in addition to the coverage of topics on accounting for depreciation, impairment, uncollectible accounts and provisions, inventory, financial assets and liabilities, and the calculation of cash flows. The course further covers more specialised topics in the application of IFRS 9 and IAS 32 regarding the accounting treatment of financial instruments. Financial reporting concepts are presented according to the provisions of the International Financial Reporting Standards (IFRS). The course finally provides an introduction to current developments in sustainability reporting. |

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| **Recommended reading** | Financial Accounting, Harrison, Horngren, Thomas, 10E/11E, Pearson, Chapters 1-3, 5-13 (Chapter 13 partly covered)<br>Greek translation: 'Χρηματοοικονομική Λογιστική' - Harrison, Horngren, Thomas, Broken Hill Publishers<br>Extensive use of module notes incorporated within PowerPoint slides |
| **Teaching methods** | • Lectures<br>• Use of Power Point, and of the online learning platform Eclass<br>• Both lecture participation and independent study are required |
| **Assessment methods** | Compulsory written exam at the end of the semester. This involves providing answers to exercises, problems and case studies, using numerical data, and a critical evaluation and discussion of the results, and also possible answers to multiple choice questions and theoretical questions. |
| **Language of instruction** | Greek/English |

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| **Course title** | **CAPITAL MARKETS & PORTFOLIO MANAGEMENT** |
| **Course code** | m44106p |
| **Type of course** | Compulsory |
| **Level of course** | Postgraduate |
| **Year of study** | 1st |
| **Semester/trimester** | 2nd |
| **Number of credits allocated** | 7,5 |
| **Name of lecturer** | Tzavalis Elias, Professor, Dept of Economics |
| **Objective of the course (preferably expressed in terms of learning outcomes and competences)** | The aim of this course is to introduce students to the modern tools of investment analysis and appraisal, including investment decision under certainty and under uncertainty, pricing of risk, portfolio management, and asset pricing. It also covers topics on pricing fixed income securities, the term structure of interest rates and bond portfolio management. The course includes demonstrations/applications of the above techniques using computer software to see how they can be used, in practice. At the end of the course, the students would have learned the tools of the modern investment analysis and become familiar with their application, in practice. |
| **Prerequisites** | None |
| **Course contents** | Investment decisions under certainty, Investment decisions under uncertainty, Mean-variance portfolio analysis, The Capital Asset Pricing Model, Factor models and the Arbitrage Pricing Theory, Bond Markets, The term structure of interest rates: theory and practice, Bond portfolio management and International capital markets and portfolio management. |

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| **Recommended reading** | Bodie Z., A. Kane and A. Marcus (2009), Essentials of Investments<br>Copeland T. and J. Weston and K. Shastri (2005), Financial Theory and Corporate Policy<br>Danthine J. and Donaldson (2002), Intermediate Financial Theory<br>Fabozzi, F., Kolm. P., Pachamanova, D and Focardi, S. (2007), Robust Portfolio Optimization and Management, Wiley.<br>Fabozzi F. (2016), Bond Markets, Analysis and Strategies, Pearson<br>Luenberger D. (1999), Investment Science |
| **Teaching methods** | Lecturing, laboratory practicals, tutorials and external seminars |
| **Assessment methods** | Written exam and assignments |
| **Language of instruction** | Greek / English |

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| **Course title** | **QUANTITATIVE METHODS** |
| **Course code** | m44105p |
| **Type of course** | Compulsory |
| **Level of course** | Postgraduate |
| **Year of study** | 1st |
| **Semester/trimester** | 2nd |
| **Number of credits allocated** | 7,5 |
| **Name of lecturer** | Demos Antonios, Professor, Dept of International and European Economic Studies |
| **Objective of the course (preferably expressed in terms of learning outcomes and competences)** | The lectures target to familiarize the class participants with the basic theoretical principles and the understanding of financial models. The objective of the applications is to familiarize the students with the various estimation techniques, applied on real data, on the areas of Economics and Finance. |
| **Prerequisites** | At least one undergraduate course in Econometrics and/or Introduction to Statistics. |
| **Course contents** | Random Variables. Covariance-Correlation dependence of random variables. Hypothesis Testing. Linear Regression and hypothesis testing. Economic Applications, with emphasis on CAPM. Transformations of random variables and introduction of dummy variables. Misspecification (autocorrelation, heteroskedasticity). Economic significance of heteroskedasticity with emphasis on portfolios and fund formation. GMM and Maximum Likelihood. Binary dependent variables (Logit, Probit). Introduction to time series with emphasis on GARCH and VAR models. |

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| **Recommended reading** | C. Heij, P. et al, Econometric Methods with applications in business and economics, Cambridge University Press.<br>J. Johnston and J. DiNardo, Econometric Methods, McGraw-Hill<br>E. Tzavalis Econometrics (in Greek)<br>A. Demos: Financial Econometrics (in Greek) |
| **Teaching methods** | Lectures, where econometric notions and models are thoroughly presented. The applications part, where various econometric packages are employed such as, R (additional seminars), Stata, Eviews, etc. with real or simulated data |
| **Assessment methods** | 20% written project 80% written exam. |
| **Language of instruction** | Greek/English |

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| **Course title** | **BANKING AND RISK MANAGEMENT** |
| **Course code** | m44108p |
| **Type of course** | Compulsory |
| **Level of course** | Postgraduate |
| **Year of study** | 2nd |
| **Semester/trimester** | 3rd |
| **Number of credits allocated** | 6 |
| **Name of lecturer** | Vasia Panousi, Associate Professor, Dept of International and European Economic Studies |
| **Objective of the course (preferably expressed in terms of learning outcomes and competences)** | The course aims to deepen scientific knowledge in areas of Banking. It develops topics on the mediation function of credit institutions, the efficiency and effectiveness of banks, as well as the detection, measurement, and management and of risks, such as credit risk, interest rate risk, exchange rate risk, liquidity risk and the operational risk. |
| **Prerequisites** | Quantitative and Financial Analysis Basics. |
| **Course contents** | Monetary and Credit System, Financial Institutions & Banking Intermediation. Shadow Banks. Banking Risks: Interest Rates, Markets, Credit, Portfolio, Off-Balance-Sheet, Equity, Liquidity. Risk Management: Liabilities and Liquidity, Deposit Insurance, Capital Adequacy, Securitization. Role of Central Bank. Financial crises. |
| **Recommended reading** | • A. Saunders, M. M. Cornett, *"Financial Institutions Management: A Risk Management Approach"*, McGraw-Hill, Irwin Series in Finance, 9th Edition, New York, 2017. |

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| | • J. Sinkey, *"Commercial Bank Financial Management"*, Prentice Hall, 6th Edition, 2002.<br>• S. Heffernan, *"Modern Banking in Theory and Practice"*, John Wiley and Sons, 1996.<br>• F. Mishkin, S. Eakins, *"Financial Markets & Institutions"*, Addison-Wesley World Student Series in Finance, 4th Edition, N.Y., 2003.<br>• J. P. Morgan, *"Credit Metrics"*, International Edition, 1997.<br>• E. Altman, E. Hotchkiss, "*Corporate Financial Distress and Bankruptcy",* J. Wiley & Sons (Wiley Finance), 3rd Edition, New Jersey, 2006.<br>• R. Brealey, S. Myers, *"Principles of Corporate Finance"*, McGraw-Hill, Irwin Series in Finance, 7th Edition, N.Y., 2003.<br>G. Sapountzoglou, H. Pentotis, *«Banking Economics»,* Edition B' (updated), Editions E. Benou, (in Greek), Athens, 2017. |
| **Teaching methods** | Live (in presence) teaching.<br>Use of ppt and pdf files.<br>Application Examples. |
| **Assessment methods** | Ongoing evaluation and in presence written examination.<br>Grading scale: 0 – 10 units. |
| **Language of instruction** | Greek/English |

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| **Course title** | **FINANCIAL DERIVATIVES** |
| **Course code** | m44107p |
| **Type of course** | Compulsory |
| **Level of course** | Postgraduate |
| **Year of study** | 1st |
| **Semester/trimester** | 2nd |
| **Number of credits allocated** | 6 |
| **Name of lecturer** | Topaloglou Nikolaos, Professor, Dept of International and European Economic Studies |
| **Objective of the course (preferably expressed in terms of learning outcomes and competences)** | The aim of this course is to introduce students to the theoretical and practical aspects of financial derivatives.<br>• Specifically, the course examines the pricing and use of financial derivatives including options, forward contracts, futures contracts, swaps and credit derivatives.<br>• The course will extensively focus on the theory and applications of derivatives in speculation and risk management.<br>• Moreover, the course includes a computational demonstration of the pricing models with excel. |

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| **Prerequisites** | |
| **Course contents** | The course covers the main financial derivatives: futures and futures on various underlying values. Options on shares, indices, currencies and futures. Interest rate swaps and foreign exchange. The focus of the analysis are pricing and hedging derivatives or derivatives positions by financial institutions. Special topics covered include, inter alia, the Black - Scholes model, binomial trees, hedging deltas, as well as various applications such as real rights in finance. |
| **Recommended reading** | John C. Hull "Options, Futures, & Other Derivatives" Prentice Hall.<br>Jarrow & Turnbull "Derivative Securities," South Western.<br>Robert Whaley, "Derivatives: Markets, Valuation, and Risk Management", Wiley.<br>Robert L. McDonald "Derivative Markets," Addison-Wesley Series in Finance.<br>Don M. Chance & Robert Brooks, "An Introduction To Derivatives And Risk Management" Thomson Southwest Learning.<br>Salih N. Neftci "An Introduction to the Mathematics of Financial Derivatives," Academic Press.<br>Paul Wilmott "Derivatives: The Theory and Practice of Financial Engineering," Wiley. |
| **Teaching methods** | Lectures, assignments |
| **Assessment methods** | Problem sets, assignments, exams. |
| **Language of instruction** | Greek/English |

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| **Course title** | **CORPORATE FINANCE** |
| **Course code** | m44110p |
| **Type of course** | Compulsory |
| **Level of course** | Postgraduate |
| **Year of study** | 1st |
| **Semester/trimester** | 2nd |
| **Number of credits allocated** | 6 |
| **Name of lecturer** | Pagratis Spyridon, Associate Professor, Dept of Economics |
| **Objective of the course (preferably expressed in terms of learning outcomes and competences)** | Corporate Finance is one of the seven core courses of the program. Students taking this course should be able to: |

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| | 1. Identify turning points in economic policy that could have a material impact on funding conditions and corporate decisions to access external financing.<br>2. Navigate in the new era of extraordinary policy interventions by central banks that have a profound impact on asset valuations and the cost of corporate financing.<br>3. Value investment projects, conduct capital budgeting exercises, and identify factors that affect corporate decisions to access different forms of financing.<br>4. Assess alternative ways of accessing capital markets.<br>5. Identify issues of first-order importance that are relevant to corporate financing, combine them to make informed decisions and negotiate funding terms with financiers. |
| **Prerequisites** | The course *Capital Markets and Portfolio Management* is prerequisite. |
| **Course contents** | **Session 1. A primer on money creation in a modern economy**<br>• Quantitative Easing (QE) and asset valuations.<br>• Quantitative Tightening (QT) and capital market turbulence. A view to the future.<br>• Long-term refinancing operations, targeted operations, credit easing, outright monetary operations (OMT) and the Covid-19 pandemic emergency programs.<br>**Session 2. Capital Structure: Optimal debt-equity choice.**<br>• Empirical patterns of corporate financing and possible explanations.<br>• Types of financial instruments and markets.<br>• Modigliani-Miller irrelevance proposition. An options-based approach to debt and equity valuations. The weighted average cost of capital (WACC) and WACC fallacies.<br>• Capital structure under financial frictions. Taxes, financial distress costs and the static trade off (STO) in practice.<br>• Debt-overhang: The underinvestment problem and the role of financial restructuring.<br>• Equity capital raising and the mechanics of rights issues.<br>• Incentives, asymmetric information and the pecking-order of financing choices.<br>**Session 3. Business plans: Risk, return, and free cash flow analysis**<br>• WACC and the internal rate of return (IRR) in practice.<br>• Data sources: Equity risk premium (ERP), marginal tax rates, sectoral betas and growth rates on operating income (EBIT).<br>Free cash flow analysis: Working capital, sunk costs, tax shields (amortization-depreciation and interest costs). |
| **Recommended reading** | *The course packet* contains an extensive set of self-contained slides (approx. 170 slides) that are structured in three main sections, following the section list above. It also incudes articles from business press (that students need to follow closely). These are optional but recommended to those students without prior exposure to finance.<br><u>Auxiliary textbooks:</u><br>1. Jean Tirole. "The Theory of Corporate Finance", Princeton University Press. |

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| | 2. Norelli A. and B. Merrill, "Quantitative Tightening: Many Moving Parts," J.P. Morgan Asset Management (Nov 2, 2017). Available at: https://blog.jpmorganinstitutional.com/2017/11/quantitative-tightening-many-moving-parts/<br>3. McLeay M, Radia A., and R. Thomas, "Money creation in the modern economy," Bank of England Quarterly Bulletin (2014 Q1). Available at: https://www.bankofengland.co.uk/quarterly-bulletin/2014/q1/money-creation-in-the-modern-economy |
| **Teaching methods** | Lecturing will be supported by video presentations, in-class case analyses, and occasional invited lectures by market experts. Students are expected to be prepared for class at all times and to contribute to class discussions. |
| **Assessment methods** | The course is evaluated through one final exam that counts for 100% of the course grade. The final exam is closed books and closed notes and lasts for 2 hours. It covers material from the entire course, including occasional invited lectures. Students are encouraged to use a calculator for the exam. This element is geared towards assessing students' ability to present concisely and quantitatively credible solutions to explicit corporate finance problems. |
| **Language of instruction** | English/Greek |

## ELECTIVE OFFERED COURSES

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| **Course title** | **COMPANIES' AND BANKS' VALUATIONS AND MERGERS** |
| **Course code** | m44225p |
| **Type of course** | Elective |
| **Level of course** | Postgraduate |
| **Year of study** | 2nd |
| **Semester/trimester** | 3rd |
| **Number of credits allocated** | 6 |
| **Name of lecturer** | Liapis Konstantinos, Professor, University of Panteion, Dept of Economic and Regional Development |
| **Objective of the course (preferably expressed in terms of learning outcomes and competences)** | The objective of the course are the valuations and the mergers & acquisitions of companies and Banks. Issues such as: Accounting for transactions in financial statements, corporate finance, capital and alternative investments, The conceptual and regulatory framework for financial reporting, Analysing and interpreting the financial statements of single entities and groups, capital structure and operations decisions, |

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| | acquisition methods and strategies, corporate restructuring, stock valuations, terms of m&a's transactions and shareholders' agreements.<br>The desired learning outcomes are a full understanding of the concepts, tools, and methods of valuing companies as well as technical mergers & acquisitions, they will also be able to apply the above knowledge, tools, and methods in practice. |
| **Prerequisites** | Without being a prerequisite, an introductory course in Accounting or Financial Analysis would be helpful. |
| **Course contents** | Thematic units of the course are:<br>• Financial reporting, The concepts and principles of groups and consolidated financial statements, Impairment of assets, Calculation and interpretation of accounting ratios and trends to address users' and stakeholders' needs, Preparation of consolidated financial statements for a simple group, Present data and information effectively, using the appropriate tools<br>• Valuation, financial analysis, and corporate financing.<br>• Methods of capital structure, equity valuation and price changes in stock markets after changes in capital<br>• Accounting forecasts, provisions, and adjustments to the financial statements<br>• Business plans and proforma financial statements<br>• The types, methods and techniques of mergers and acquisitions<br>• Business Mergers and Inter-Corporate Investments<br>• Consolidation accounting<br>• Global operations, multinational corporations (MNEs) and banks (MNBs)<br>• Decision making for equity investments<br>• Mergers and acquisitions and corporate restructuring<br>• Venture capital |
| **Recommended reading** | • Λιάπης Κ, Χύτης Ε, Γαλανός Χ Λογιστική Εταιρειών, Φορολογία και Εταιρικοί μετασχηματισμοί, 2021, εκδόσεις Μπένου<br>• Brigham, E., & Ehrhardt, M. (2013). Financial management: theory & practice. Cengage Learning.<br>• CFA Program Level II, Corporate Finance, Mergers and Acquisitions, 2021, https://www.cfainstitute.org/en/membership/professional-development/refresher-readings/mergers-acquisitions<br>• Damodaran Aswath, Investment Valuation, Third Edition, Wiley Finance<br>• Fernαndez Pablo, The Equity Premium in 150 Textbooks, IESE Business School, November 16, 2010<br>• Gaughan, P. A. (2010). Mergers, acquisitions, and corporate restructurings. John Wiley & Sons.<br>• International Accounting Standards Board. (2015). A Guide through IFRS® (Green Book). Kluwer.<br>• EDUCATIONAL MATERIAL ON FAIR VALUE MEASUREMENT, IFRS Foundation, 2013, https://www.ifrs.org/-/media/feature/supporting-implementation/ifrs-13/education-ifrs-13-eng.pdf |
| **Teaching methods** | Lectures – discussions, case studies, methods' applications using excel |

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| **Assessment methods** | Homework's per thematic unit, during the lectures:<br>40% of the final grade<br>Final exam at the end of the course:<br>60% of the final grade. |
| **Language of instruction** | Greek and English |

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| **Course title** | **CREDIT RISK MANAGEMENT** |
| **Course code** | m44213p |
| **Type of course** | Elective |
| **Level of course** | Postgraduate |
| **Year of study** | 2nd |
| **Semester/trimester** | 3rd |
| **Number of credits allocated** | 6 |
| **Name of lecturer** | Topaloglou Nikolaos, Professor, Dept of International and European Economic Studies |
| **Objective of the course (preferably expressed in terms of learning outcomes and competences)** | By the course end, the students should be able to:<br>• Master the fundamentals of credit risk management as well of compliance to bank regulatory procedures.<br>• Pricing of credit and interest rate derivatives<br>• Master the fundamentals of hedging the interest rate risk using derivatives |
| **Prerequisites** | |
| **Course contents** | The first section presents standard interest rates models. These are then used in practice to price option or futures on Treasury Bills and Bonds, as well as interest caps and floors. They can also be used to hedge against risky debt. Having introduced the above tools, the second section the course makes an introduction to the credit risk, credit ratings, estimation of default probabilities, calculates the credit risk on debt instruments, presents credit risky bonds, credit default swaps, futures and options on credit default swap spreads, options on swaps, and finally introduces the mortgage-backed securities. The latter can be found very useful for practitioners in the markets for their every day activities, while students will learn all the necessary tools for credit risk management. |
| **Recommended reading** | Hull J (2008), Options, futures and other derivatives, Prentice Hall<br>Jarrow R.A and Turnbull (1996), Derivative Securities, South-Western<br>De Servigny A. and Renault O. (2004), Measuring and Managing Credit Risk, Standard & Poor's Press<br>Loeffler G. and Posch P.N. (2007), Credit Risk Modelling Using Excel and VBA , The Wiley Finance Series |

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| | Felsenheimer J, Gisdakis P and Zaiser M. (2005), Active Credit Portfolio Management: A Practical Guide to Credit Risk Management Strategies, Wiley. |
| **Teaching methods** | Lectures, assignments |
| **Assessment methods** | Problem sets, assignments, exams. |
| **Language of instruction** | Greek/English |

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| **Course title** | **LARGE DATA AND STATISTICAL LEARNING** |
| **Course code** | m44227p |
| **Type of course** | Elective |
| **Level of course** | Postgraduate |
| **Year of study** | 2nd |
| **Semester/trimester** | 3rd |
| **Number of credits allocated** | 6 |
| **Name of lecturer** | Papailias Fotios, Senior Lecturer, King's Business School |
| **Objective of the course (preferably expressed in terms of learning outcomes and competences)** | After successful completion of this course the students must have a good understanding of:<br>• computational inference,<br>• time series forecasting,<br>• data features (seasonalities, nonstationarities, etc.),<br>• how machine learning methods work (supervised and unsupervised machine leaning).<br>Furthermore, students are expected to obtain the necessary skills to be able to:<br>• use scientific software and develop codes independently,<br>• collect, handle and organise large panels of data,<br>• visualise data and extract features,<br>• apply machine learning techniques in practice and interpret the output in economic and finance applications. |
| **Prerequisites** | None formal pre-requisite, a basic level of maths/stats and econometrics is required. |
| **Course contents** | This course is designed to introduce students to the concepts of large data handling and analysis with machine learning techniques. We start with computational analysis and inference and discuss the Monte Carlo, Bootstrap, k-fold cross-validation and recursive and rolling estimation |

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| | methodologies. We provide a solid basis for time-series forecasting based on predictive linear regressions as well as using the Kalman Smoother. Next, we discuss large data handling techniques and discuss its features (seasonalities, nonstationarities). We discuss how unsupervised machine learning methodologies (k-means clustering, principal component analysis and dynamic factor analysis) could be applied in economics and finance forecasting applications (including the construction of Financial Conditions Indexes and Uncertainty Indicators). Next, we introduce the penalised regression methodologies of ridge, lasso and elastic net. We extend our discussion to unbalanced datasets and use bridge equations, MIDAS and U-MIDAS models as suggested remedies. Finally, our special topics include adaptive learning and modelling and applications of machine learning in portfolio selection.<br>On top of our theory discussions, the course has a "hands-on" approach where all these methods applied in real data using the R Project for Statistical Analysis as the main scientific software. |
| **Recommended reading** | Main reading: supplied material.<br><br>Supplementary readings include:<br><br>• James, G., Witten, D., Hastie, T., Tibshirani, T. (2013). An Introduction to Statistical Learning with Applications in R. Springer, New York.<br>• Hyndman, R.J., Athanasopoulos, G. (2019). Forecasting: Principles and Practice, 3rd Edition, OTexts: Melbourne, Australia.<br>• Sheppard, K. (2020). Financial Econometrics Notes. University of Oxford.<br>And various academic papers discussed throughout the module |
| **Teaching methods** | • Weekly lectures (theory & hands-on),<br>• Weekly tutorials (theory & hands-on)<br>• Learning-by-doing approach. |
| **Assessment methods** | Weights in squared brackets.<br>• [10%] Weekly Assignments,<br>• [35%] Project 1 (essay and code),<br>• [35%] Project 2 (essay and code),<br>• [20%] Final Exam. |
| **Language of instruction** | English (occasional use of Greek). |

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| **Course title** | **MARKET MICROSTRUCTURE WITH COMPUTATIONAL AND STATISTICAL METHODS** |
| **Course code** | m44226p |
| **Type of course** | Elective |
| **Level of course** | Postgraduate |
| **Year of study** | 2nd |
| **Semester/trimester** | 3rd |
| **Number of credits allocated** | 6 |
| **Name of lecturer** | Chalamandaris George, Associate Professor, Dept of Accounting and Finance |
| **Objective of the course (preferably expressed in terms of learning outcomes and competences)** | Market Microstructure is the field that deals with the organization of markets and their participants. Specifically, the dynamics of trade and price developments in different markets are examined by studying:<br>• the rules governing trading.<br>• the types of market-participants.<br>• their incentives, and<br>• the strategies they choose to achieve their objectives.<br>The student will be able to interpret the very short-term market dynamics, as well as to assess the possible strategic decisions that traders face over the course of a day. The syllabus covers both theoretical work and empirical work. |
| **Prerequisites** | None |
| **Course contents** | The course covers the following topics:<br>• Market Industry: Buy/Sell side, dealers, brokers, clearing and settlement.<br>• Orders, Algos and algorithmic trading.<br>• The role of dealers, brokers.<br>• Main categories of market-users (profit-motivated, utilitarian, noise traders) and their incentives.<br>• Basic strategies of each of these categories and how they affect the market mechanism.<br>• Price discovery in exchanges and OTC markets.<br>• The incorporation of information in market prices and the informational content of trades.<br>• Market structures: Order-driven, Dealer-to-Customer, Crossing-networks and hybrid markets.<br>• The nature of liquidity and volatility, their relationship and how they both affect market efficiency. |

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| | • Manifestations of asymmetric information, strategies for exploiting the information advantage and ways of protection against the risk arising from it.<br>• Key microstructure models: Garman, Roll, Glosten-Millgrom, Easley-O'Hara, Kyle, Glosten-Harris.<br>Empirical Portfolio Analysis and trading strategies, with the use of software including Microsoft Office Excel and Python. |
| **Recommended reading** | The students will be given lecture notes and simulation software. In addition, we suggest the following books:<br>• L. Harris, "Trading and Exchanges – Market Microstructure for Practitioners", Oxford University Press, 2003<br>• J. Hasbrouck, "Empirical Market Microstructure – Economic and Statistical Perspectives on the Dynamics of Trade in Securities Market", Teaching Notes, 2003<br>• M. O'Hara, "Market Microstructure Theory", Basil Blackwell, Cambridge, 1995. |
| **Teaching methods** | Lectures and Assignment |
| **Assessment methods** | Written Group assignment and individual oral examination |
| **Language of instruction** | Greek / English |

## REPLACING MASTER THESIS

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| **Course title** | **SPECIAL TOPICS IN BANKING** |
| **Course code** | m44223p |
| **Type of course** | Replacing Master's Thesis |
| **Level of course** | Postgraduate |
| **Year of study** | 2nd |
| **Semester/trimester** | 4th |
| **Number of credits allocated** | 10 |
| **Name of lecturer** | Zanias Georgios, Professor, Dept of International and European Economic Studies |
| **Objective of the course (preferably expressed in terms of learning outcomes and competences)** | Linking theory with practice by focusing on almost all the sectors of a bank and taught by top experts of the Greek banking system. |

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| **Prerequisites** | The individual courses of the programme itself taught during the previous semesters. |
| **Course contents** | 1.The banking sector in Greece<br>2.Overview of the functioning of a bank and the new trends for future banking<br>3.Banking supervision and the European Banking Union<br>4.Technology in banking (IT, Digital, Fintech, Cybersecurity)<br>5.Case studies of financing large corporates and infrastructure projects<br>6.Risk management in banking<br>7.Capital markets and banks<br>8.Financial reporting<br>9. Compliance (including Money Laundering)<br>10. Climate risk and ESG |
| **Recommended reading** | Powerpoint presentations and additional bibliography per lecture/seminar. |
| **Teaching methods** | Lectures and seminars |
| **Assessment methods** | Multiple choice questions |
| **Language of instruction** | Greek/English |

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| **Course title** | **SPECIAL ISSUES IN FINANCE AND INVESTMENTS (INTERNATIONAL FINANCE)** |
| **Course code** | m44224p |
| **Type of course** | Replacing Master's Thesis |
| **Level of course** | Postgraduate |
| **Year of study** | 2nd |
| **Semester/trimester** | 4th |
| **Number of credits allocated** | 10 |
| **Name of lecturer** | Tzavalis Elias, Professor, Dept of Economics<br>Topaloglou Nikolaos, Professor, Dept of International and European Economic Studies |
| **Objective of the course (preferably expressed in terms of learning outcomes and competences)** | The aim of this course is to present a number of risk management and investment applications to the students, which are used in practice. It covers topics in international portfolio risk management and currency risk, matual funds and portfolio performance evaluation, Investments strategies and value at risk (VaR) applications.<br>At the end of the course, the students will have become familiar with techniques and concepts on international investing risk management procedures and diversification, performance evaluation procedures and |

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| | security selection, investment strategies accounting for taxes and inflation, investor constrains, investment policies and VaR procedures. VaR procedures for asset portfolios and loans management will be demonstrated through an econometric package. |
| **Prerequisites** | |
| **Course contents** | The course covers the topics:<br>1. **International portfolio management and investing** (Currency risk, forward markets, CIRP and UIRP, PPP, ICAPM, pricing currency risk, home bias)<br>2. **Performance evaluation and active portfolio management** (Risk-adjusted returns, style analysis, portfolio performance evaluation metrics, active portfolio management, security selection (the Treynor-Black model), portfolio construction and alternative optimization techniques)<br>3. **Investment strategies and processes** (Strategies accounting for Taxes and inflation, Social Security, Investor constrains, investment policiesExpected utility, risk aversion, certainty equivalence and risk, stochastic dominance).<br>4. **VaR (Value-at-Risk VaR) appliactions** (Applications of VaR to stock, bond and foreign exchange Portfolios, economic capital, and credit, liquidity and operational risks) |
| **Recommended reading** | Allen Steven ( 2013 ), Financial Risk Management, A Practitioner's Guide to Managing Market and Credit Risk, John Wiley & Sons.<br>Bodie Z., Kane A., and Marcus A.,, "Essentials of Investments", McGraw Hill<br>Copeland T., Weston J. and Shastri K, "Financial Theory and Corporate Policy", Addison- Wesley |
| **Teaching methods** | Lectures, assignments |
| **Assessment methods** | Problem sets, assignments, exams. |
| **Language of instruction** | Greek/English |

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| **Course title** | **INFORMATION TECHNOLOGIES, TRADING & INVESTMENT STRATEGIES** |
| **Course code** | m44109p |
| **Type of course** | Replacing Master's Thesis |
| **Level of course** | Postgraduate |
| **Year of study** | 2nd |
| **Semester/trimester** | 3rd |
| **Number of credits allocated** | 10 |

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| **Name of lecturer** | Landis Conrad Felix Michel, Economist- Data Analyst |
| **Objective of the course (preferably expressed in terms of learning outcomes and competences)** | After the completion of the course the students will have an understanding of the activities of a financial institution's treasury department. They will acquire fundamental knowledge and skills on using financial databases, on trading mechanisms, on theoretical and empirical issues of different financial instruments, their valuation methodology, and their uses in risk and portfolio management. They will also gain experience in trading simulated securities in Bloomberg and Thomson Reuters EIKON Terminals. |
| **Prerequisites** | The MSc's compulsory courses are adequate preparation. |
| **Course contents** | Getting familiar with Thomson Reuters EIKON and BLOOMBERG platforms. Basic concepts of using financial databases and handling/analyzing financial data. Applied portfolio theory: asset pricing models and trading strategies. Portfolio management using derivatives. |
| **Recommended reading** | • Anatoly B. Schmidt, 2011. "Financial Markets and Trading: An Introduction to Market Microstructure and Trading Strategies", Wiley.<br>• John C. Hull, Options, Futures and Other Derivatives, Latest Edition, Wiley.<br>• Cochrane, John H., 2000, "New Facts in Finance". SSRN:https://ssrn.com/abstract=218869orhttp://dx.doi.org/10.2139/ssrn.218869.<br>• Sharpe, William F. 1990, "Capital Asset Prices with and without Negative Holdings". https://www.nobelprize.org/uploads/2018/06/sharpe-lecture.pdf.<br>• Schwert, G. William, 2003. "Anomalies and market efficiency", Handbook of the Economics of Finance, http://schwert.ssb.rochester.edu/hbfech15.pdf |
| **Teaching methods** | Lectures |
| **Assessment methods** | Evaluation will be based on a series of written empirical assignments (70%) and a final written exam (30%). |
| **Language of instruction** | Greek |

# PART III: STUDENT INFORMATION

## GENERAL INFORMATION FOR STUDENTS

The Athens University of Economics and Business provides not only high-quality education but also high-quality student services. The adoption of the Presidential Decree 387/83 and Law 1404/83 defines the operation, organization, and administration of Student Clubs at Universities, which aim at improving the living conditions of the students and enhance their social and intellectual wellbeing through engagement and socialization initiatives.

To fulfill this objective the University ensures the required infrastructure for housing, meals, and sports activities through the operation of a student restaurant, reading rooms, library, organization of lectures, concerts, theatrical performances, and excursions in Greece and abroad. Further in this context, the University supports the development of international student relations, organizes foreign language classes, computer/software literacy classes, and courses in modern Greek as a foreign language for foreign students and expatriated Greek students.

Detailed information on meals, housing, fitness, foreign languages, cultural activities, scholarships, financial aid, is provided on the website of AUEB's Student Club at https://lesxi.aueb.gr/

## ELECTRONIC SERVICES

A significant number of procedures related to both attendance and student care are carried out electronically through applications of the University or the Ministry of Education and Religious Affairs. All applications are accessible with the same codes (username & password).

- **E-mail account:**

Detailed instructions for using the Webmail Service are provided at

https://www.aueb.gr/el/content/webmail-manual

- **Electronic Secretariat (Student Register)**

The Electronic Secretariat application is the information system through which students can be served by the Department's Secretariat via the web.

- **Wireless network**

Using their personal codes, students have access to a wireless network in all areas of the Athens University of Economics and Business buildings/campus. https://www.aueb.gr/en/content/wi-fi-connection

- **E-Learning Platform – ECLASS**

The Open eClass platform is an integrated Electronic Course Management System and is the proposal of the Academic Internet (GUnet) to support Asynchronous Distance Education Services.

Instructions are provided at https://eclass.aueb.gr/info/manual.php

## Medical Services, Insurance / Healthcare

Undergraduate, postgraduate and PhD students at the University who have no other medical and hospital care are entitled to full medical and hospital care in the National Health System with coverage of the relevant costs by the National Health Service Provider. The doctor's office is located in the main building and operates on some working days as announced. A psychiatric counseling service also operates at the University, staffed with a physician specializing in the treatment of mental health issues. More information can be found at https://www.aueb.gr/en/content/health-care .

## Services/Facilities to Students with Special Needs

The Athens University of Economics and Business ensures the facilitation of students with special needs, through the design, implementation, and environmental adaptations, for access to the university building facilities. In the main building there are specially configured lifting machines, ramps, and elevators. There are also special regulations for conducting exams for students with special needs.

The Athens University of Economics and Business has established a Committee for Equal Access for people with disabilities and people with special educational needs. The Commission is an advisory body and submits recommendations to the competent bodies for the formulation and implementation of the policy of equal access for persons with disabilities and persons with special educational needs.

Through the Library services, students with physical disabilities are granted electronic access to the recommended Greek bibliography of the courses taught at the University. In this context, the Association of Greek Academic Libraries (SEAB) has developed a multimodal electronic library called AMELib.

More information is available at https://www.aueb.gr/en/lib/content/users-additional-needs .

## Studies Advisor

The Studies Advisor is the point of contact for students in matters related to their academic progress, their participation in the academic community and their professional development and has the following responsibilities. His role is to inform and support students regarding:

- the programme, the courses offered, their content and requirements.
- Provides counseling and guidance in choosing a thesis topic, suggests solutions, where possible, in case of learning and course attendance difficulties.
- Advises and directs in matters of studies and professional development possibilities after the end of the programme.
- Provides support in case that problems (e.g. personal, academic, learning difficulties) create obstacles and difficulties in students' studies and performance

**The Studies Advisor of the MSc in Finance and Banking for the academic year 2023-24 is the Associate Professor Ioannis Dendramis**

## LIBRARY AND STUDY ROOMS

The Library & Information Center of the University operates at the University's main building. The AUEB Library is a member of the Hellenic Academic Libraries Association (Heal-LINK), the European Documentation Centers Europe Direct and the Economic Libraries Cooperation Network (DIOBI).

Three Documentation Centers operate within the library:

- The European Documentation Center
- The Organization for Economic Cooperation and Development (OECD) Documentation Center
- The Delegation Center of the World Tourism Organization (WHO)

The library contributes substantially both to meeting the needs for scientific information of the academic community and to supporting studying and research. The library provides access to:

- printed collection of books and scientific journals,
- course books used in modules,
- collection of electronic scientific journals& books
- postgraduate theses and doctoral theses that are produced in Athens University of Economics and Business and deposited in digital form at the PYXIDA institutional repository
- sectoral studies
- statistical series by national and international organizations
- audiovisual material
- information material (encyclopedias, dictionaries)
- databases on the topics used by the University
- printed collections of other academic libraries

The library lends all its printed collections, except for magazines and statistical series, in accordance with its internal rules of operation. The Library and Information Center offers reading rooms, computer workstations for visitors, photocopiers and printing machines, and interlibrary loan of books and journal articles from other academic libraries that are members of its network. More information at https://www.aueb.gr/en/library .

## International Programmes and Information on International Student Mobility

Athens University of Economics and Business is actively involved in the Erasmus+ Program since 1987 promoting cooperation with universities, businesses, and international organizations of the European Union (EU) as well as in the mobility of students, teaching, and administrative staff.

In addition, strengthening its internationalization objectives, it creates new opportunities through the Erasmus+ International Mobility Program. Within this framework, mobility scholarships are granted through the State Scholarships Foundation (SSF) to incoming and outgoing students of the three study cycles, according to the funding approved each year by the State Scholarship Foundation for the University. Outgoing students have the possibility to spend a period of study at a Partner Institution outside the EU with full academic recognition through the application of the ECTS credits system. More information can be found at https://www.aueb.gr/en/erasmus

## Career Office (**https://www.aueb.gr/el/career**)

Its main mission is to support students and graduates of undergraduate and postgraduate study programs for their smooth integration into the labor market through the publication of job advertisements, promotion of CVs,the "OPA Career Days" event. The consulting services aim at providing information about their work and educational future and the most effective job search strategy through personalized counseling sessions, organization of small-member workshops and events, conducting psychometric and self-awareness tests etc.

## Student Associations

Various student clubs and associations are active within the community of the Athens University of Economics and Business (https://www.aueb.gr/en/content/student-clubs).

## Alumni Network

Adhering to a long tradition of educating future top executives in the economic, social, and political life of the country, AUEB is proud that thousands of its graduates hold leading positions in companies, organizations, research institutes and universities in Greece and abroad. Understanding the importance of developing and strengthening the bond with its graduates, AUEB created its Alumni network including a platform https://alumni.aueb.gr where all graduates of the University can register. The main objectives of the Network are the connection of the graduates with their colleagues and former fellow students, and diffusion of information about activities, services, and events in and around the University that concern them. More information can be found at https://alumni.aueb.gr/en

## Volunteer Program

Within the framework of its strategies, the "AUEB Volunteers" Volunteering Program was launched in September 2017. The aim of the Program is to highlight important social issues and the value of participation and practical contribution, but also to raise community awareness regarding the 17 UN Sustainable Development Goals. Actions are developed around two pillars: (a) actions addressed to

AUEB's Community, which have as their main objective the maintenance of the quality of the University's infrastructure based on their aesthetics and functionality, and (b) actions addressed to Greek society. More information can be found at https://auebvolunteers.gr/english-intro/

## Quality Assurance

The Athens University of Economics & Business implements a quality assurance policy to continuously improve the quality of its study programs, research activities and administrative services, and upgrade the academic and administrative processes and the University's operations. The Quality Assurance Unit (MODIP) operating at AUEB coordinates and supports evaluation processes. Particularly the quality assurance of the educational process is achieved using the module/teaching evaluation questionnaire completed by AUEB students. More information can be found at https://aueb.gr/modip .

## Training and Lifelong Learning Center

The Center for Training and Lifelong Learning **(KEDIVIM)** is an AUEB unit which ensures the coordination and interdisciplinary cooperation in the development of training programs, continuing education, training and in general lifelong learning, which complement, modernize and/or upgrade knowledge, competences, and skills, acquired from formal education, vocational education and initial vocational training systems or from work experience, facilitating integration or reintegration in the labor market, job security and professional and personal development. More information can be found at https://www.aueb.gr/en/content/kedivim-opa.